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January, 1916

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The Canadian Builder and Carpenter

C A Bradshaw
183 Davenport Rd
TORONTO ONT

Published Monthly by The Commercial Press, Limited, 32 Colborne St., Toronto

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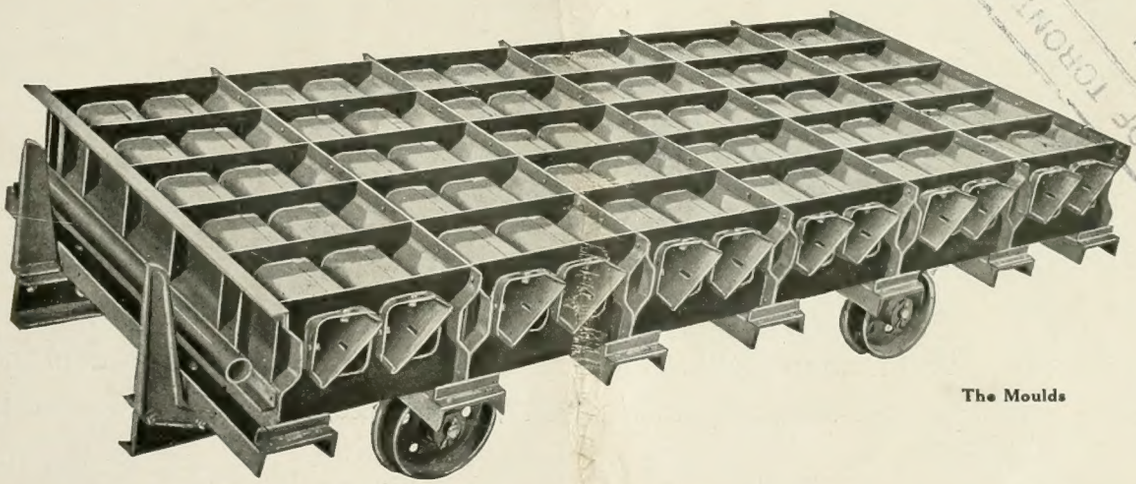

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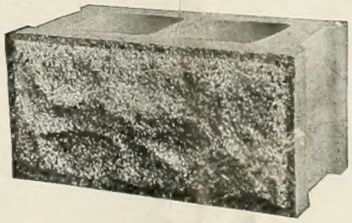

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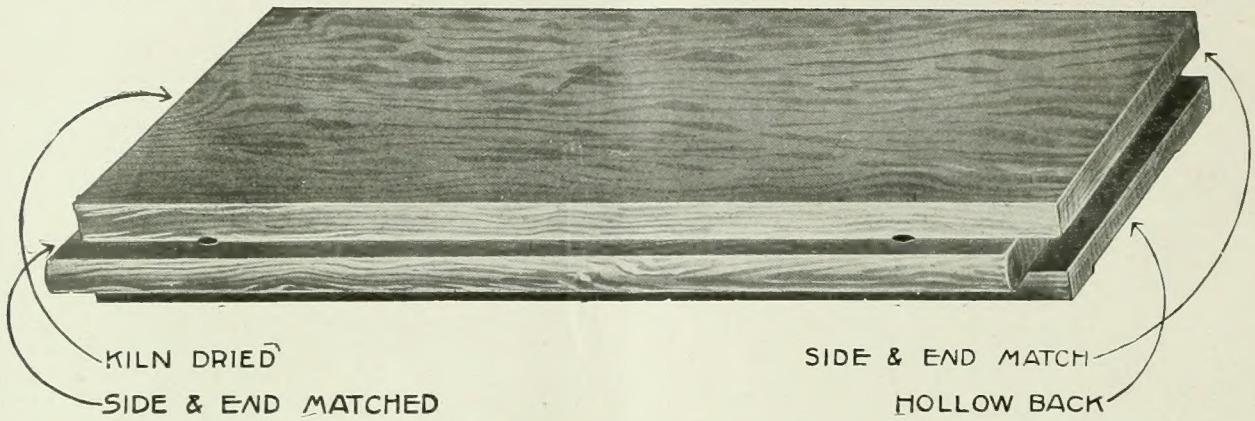

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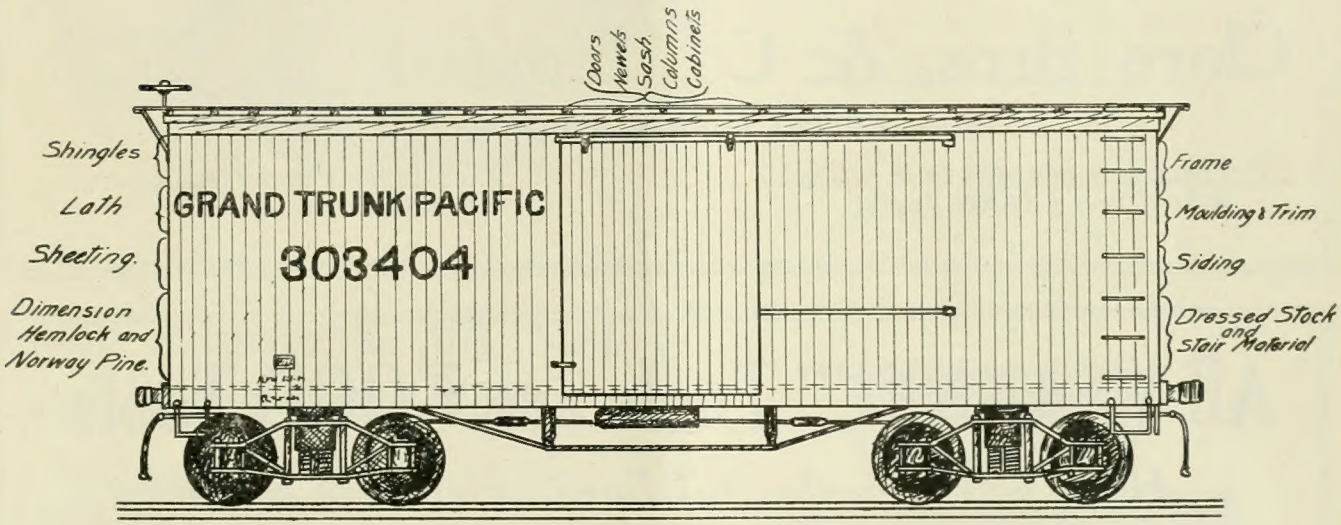

Send us your lists for quotations, F.O.B. your station. Or let us have our representative call without obligation to you. He is a practical man who may be able to give you some helpful suggestions.

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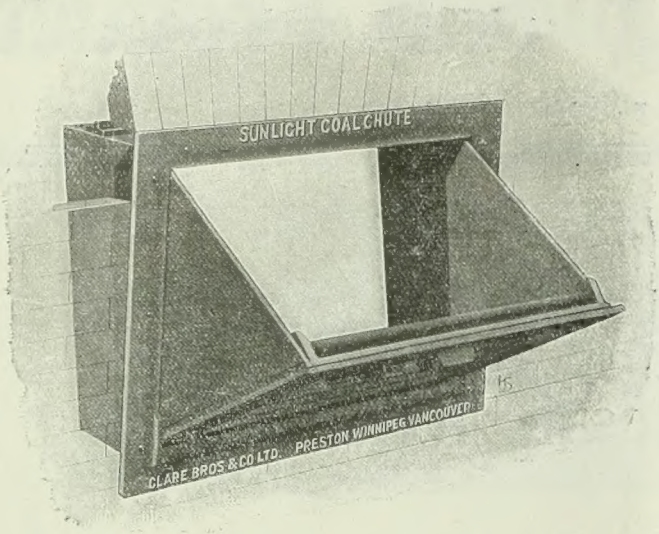

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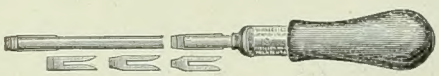

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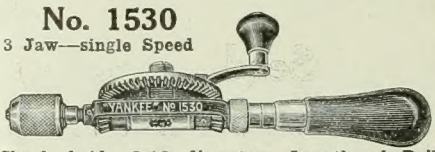

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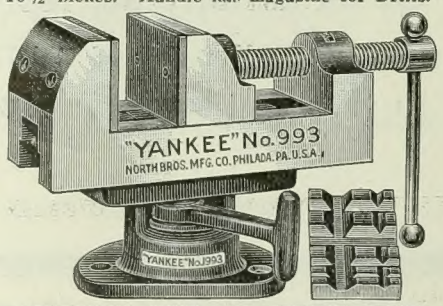

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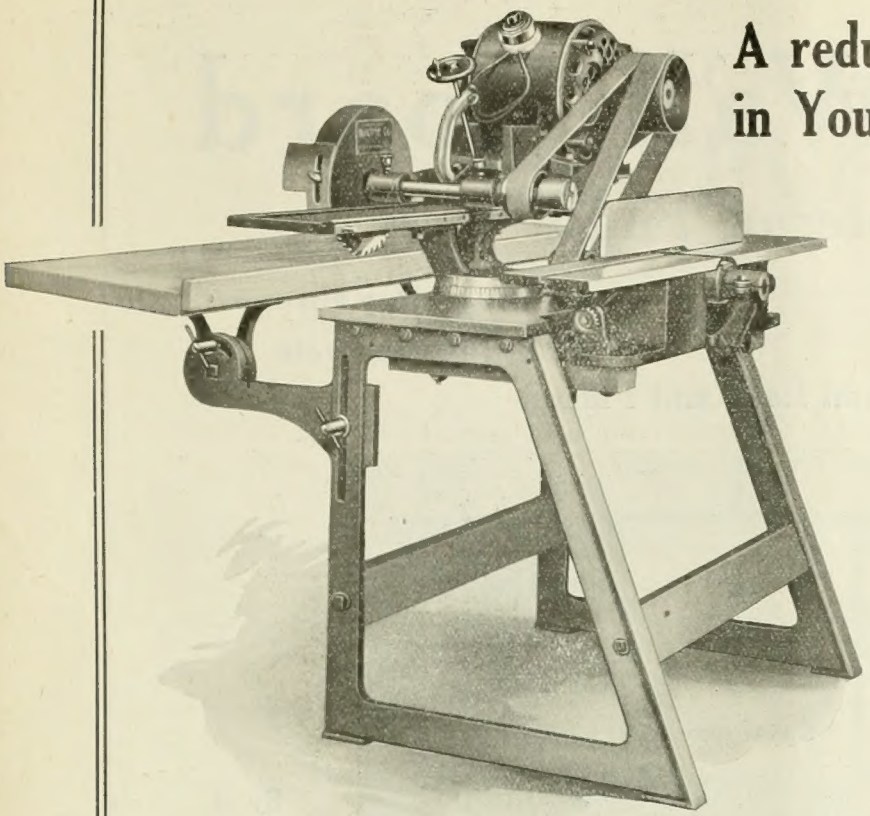

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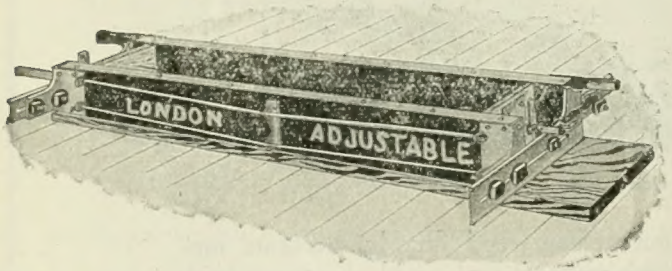

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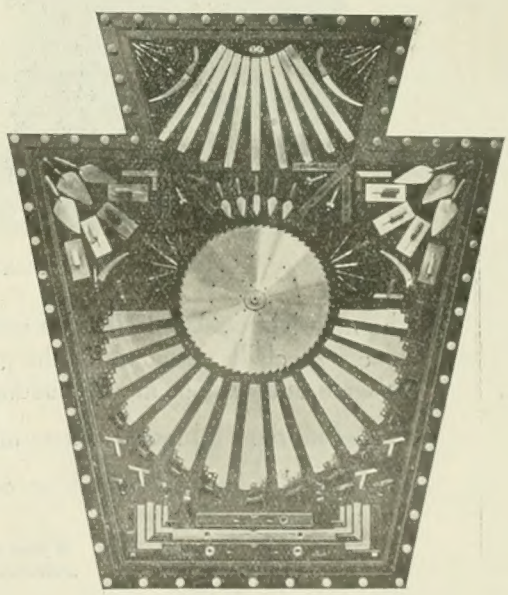

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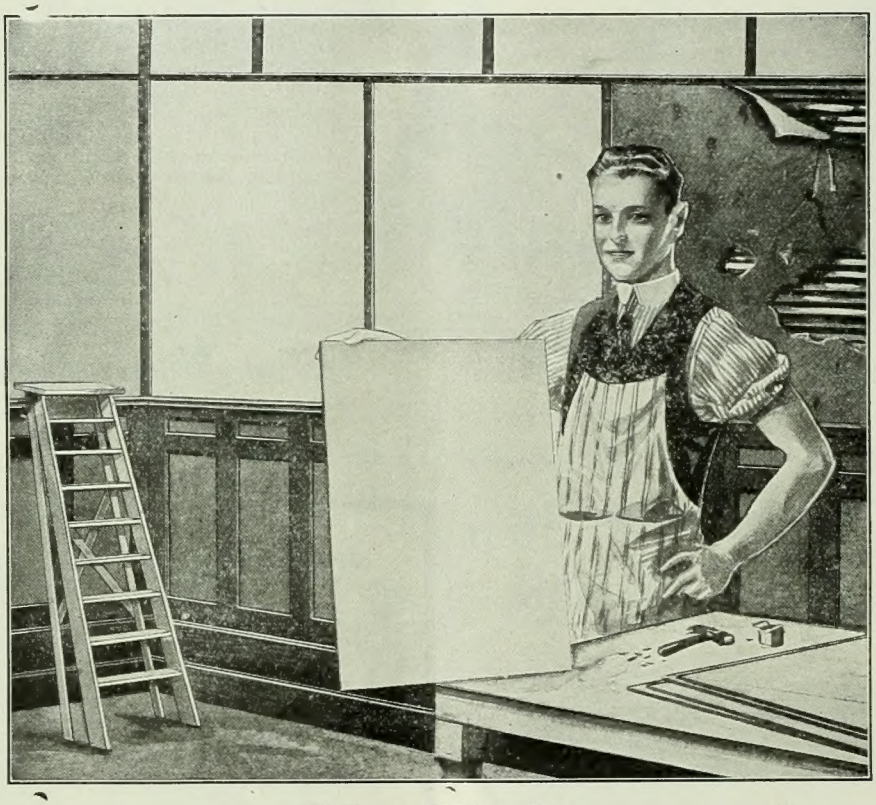

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- New Heating By-law for Toronto Being Discussed.

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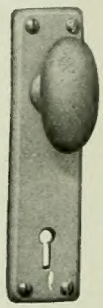
Supplied the hardware for Mr. W. M. Week's house, the illustration of which appears on the opposite page

WE ARE THE ONLY FIRM IN TORONTO WHO CARRY A FULL LINE OF YALE HARDWARE



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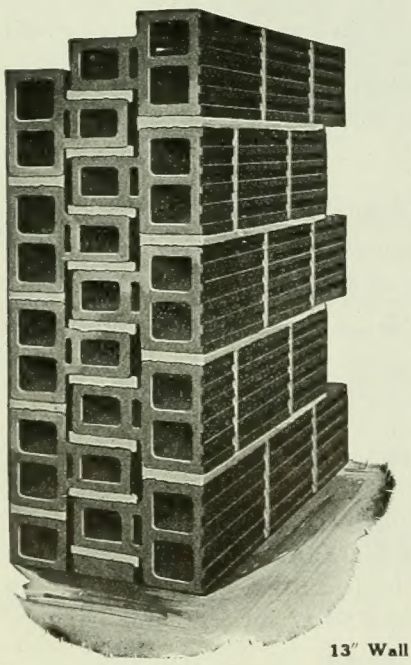

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Denison Interlocking Hollow Tile is the ideal hollow tile for walls in all classes of buildings, foundations and partitions. Especially adapted for use in Stucco houses and walls faced with brick.

Denison Interlocking Hollow Tile possesses bonding and interlocking properties unequalled by any other tile.

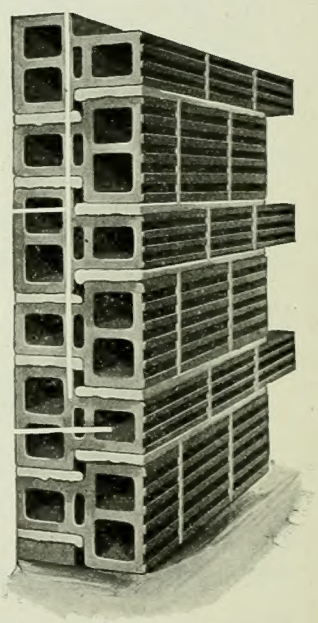
When interlocking tile is used in wall construction there are no mortar joints extending through the wall to carry moisture.

The installation of its air chambers and general mode of construction nullifies and reduces the effect of outside upon inside temperature.

Denison Interlocking Hollow Tile makes a building cooler in summer and warmer in winter.

It is the ideal method of construction, as the one size and shape builds all thickness of walls.

Made in Canada



9″ Wall

Sun Brick Co., Limited, Traders Bank Bldg., Toronto, Ont.

Agents: Hyde & Sons, 12 Bluery St., Montreal Shaver & Beattie, Booth Building, Ottawa

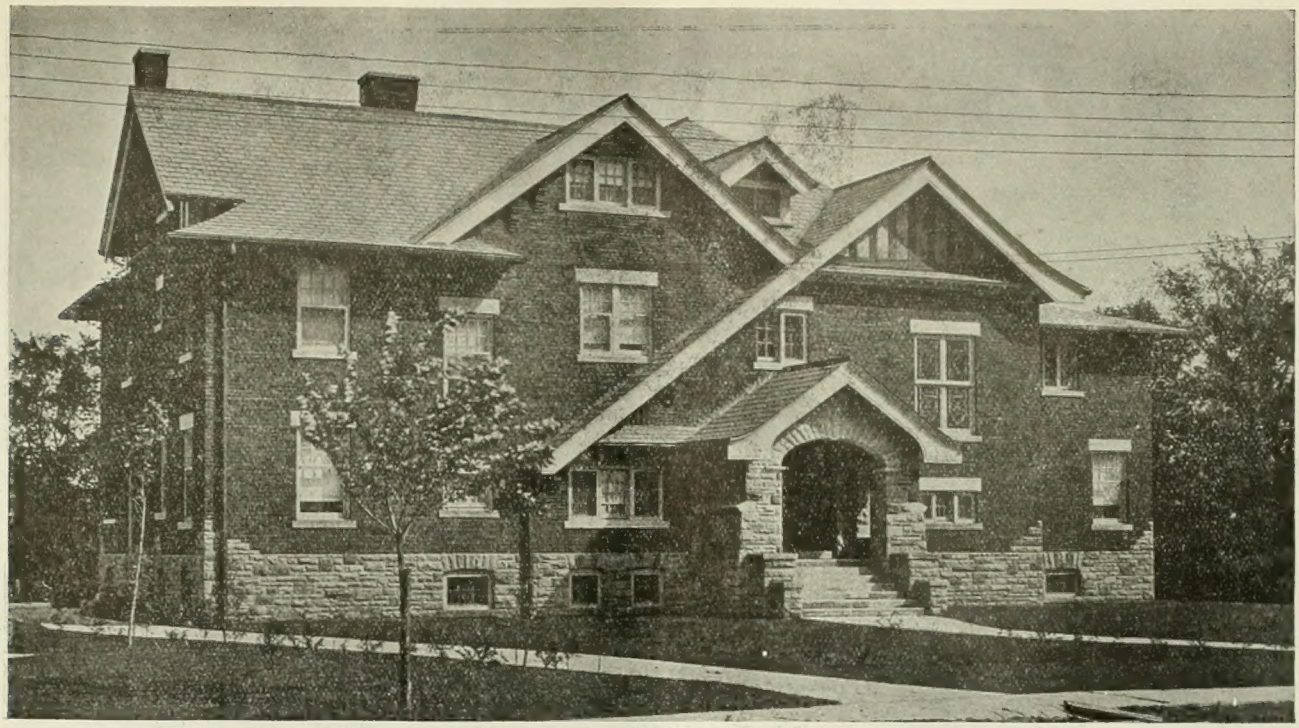


FIG. 1.—FRONT OF HOUSE OF GREY STONE AND RUSTIC BRICK WITH ½-IN. WHITE JOINTS. THE DETAILS OF CONSTRUCTION AND THE SYSTEM IN THIS HOUSE ARE DESCRIBED BELOW.

Features of Beautiful Toronto Brick and Stone Residence

This article fully describes and illustrates the features of one of Toronto's beautiful residences. Many of the features may be used in less expensive houses. The lighting system is described to show builders how they must provide for the increased use of electric current in up-to-date residences.

Built for W. M. WEEKS, Cortleigh Blvd., Toronto. Builder: A. D. VIDLER, 47 Manchester Ave., Toronto

TORONTO has a large number of beautiful residences containing many conveniences which could be copied to advantage by builders in less expensive houses. Illustrated herewith is one of these homes, built under the supervision of A. D. Vidler for W. M. Weeks, Cortleigh Blvd., Toronto.

The house is of unique design, built of grey stone and rustic brick with half-inch white joints, dressed stone head sills, etc. The portion above grade to the floor level, viz. four feet, is ashlar work in grey stone, that is, faced with grey hammer dressed stone. The front porch is finished with cut stone caps. The arch and steps are stone and the floor is red tile.

The rear terrace floor is in red tile, with rustic piers, stone steps and ashlar wing walls with stone caps. It is 7 ft. 6 ins. wide by 45 ft. long, and has a splendid view over the ravine, facing southeast. It is sheltered by the spacious deck above, and the two end walls thus make a cool lounging place for hot days. The heavy balustrade and pedestals make a fine setting to this rear part, which is practically the front from the owner's point of view.

Walls and Partitions

The house is substantially built throughout, the basement walls being 18 ins., 14 ins. and 9 ins. on concrete foundation 26 ins. by 12 ins. The wood partitions in basement are carried on 9 ins. of concrete and placed there as the building advanced, thus making a solid bearing to take the floors above. All partitions bearing internal walls have been built in brick. Wood partitions are 6 ins.

The main partitions above basement and on the ground floor are carried on steel beams 5 ins. by 15 ins. and 5 ins. by 10 ins. The bearings of all floors have a direct bearing from the basement and are carried practically over each other either on brick walls or steel beams. The basement walls have a damp course and are well tarred on outside, with weeping tiles around. All internal drainage to sewer is laid in iron with proper flushing and clean-outs, etc.

Children's Room in Basement

The basement contains a spacious playroom for the children with rustic brick fireplace and paneled inglenook with seats, heavy dado rail and base. There is a dark closet for photo work and a light store for toys. The room is well lighted, has double floors laid on 2x4 joists, concreted and well tarred. The woodwork is Georgia pine, dark finish, with natural finish Georgia pine floor. The size of this room is 21 ft. by 30 ft.

The fruit room is fitted with cupboard shelves and is well lighted. The laundry has tubs, hot water heater and other conveniences, with linen chute from second floor.

The drying room is 30 ft. x 15 ft., for the drying and airing of clothes, etc.

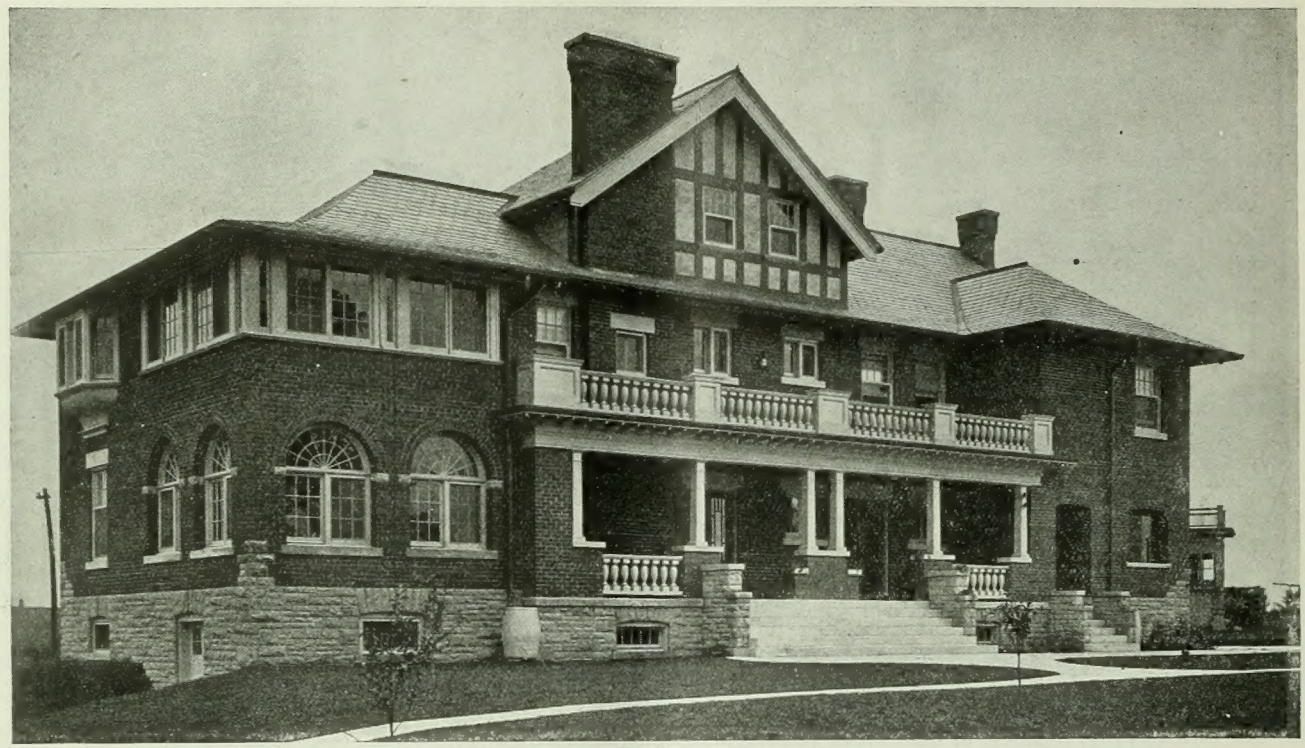


Fig. 2—Back of grey stone and brick house, showing balcony, etc. See detail photo of balcony and lighting of same.

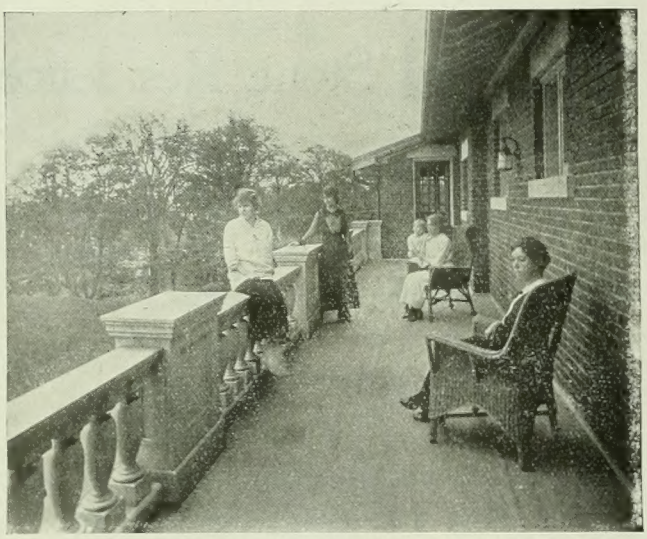


Fig. 3—Detail view of balcony, showing wall lighting fixture.

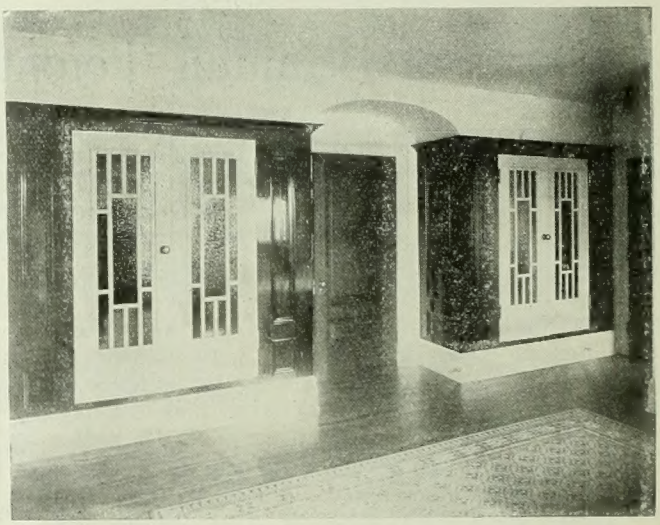


Fig. 4—Wardrobe in bedroom No. 1. A light is placed to shine into one wardrobe, shown at the right.

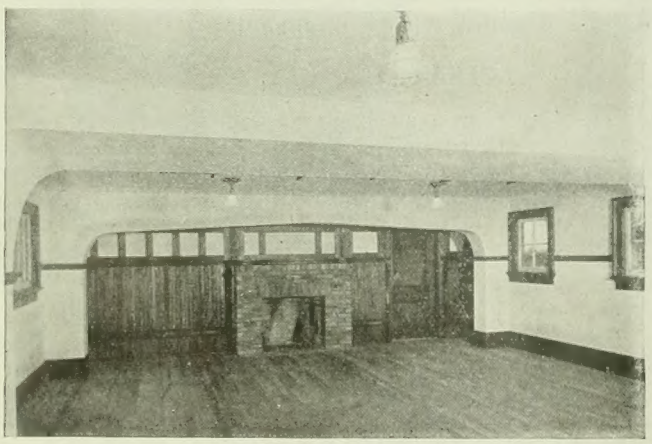


Fig. 5—Children's playroom, in basement, showing fireplace and ceiling lights.

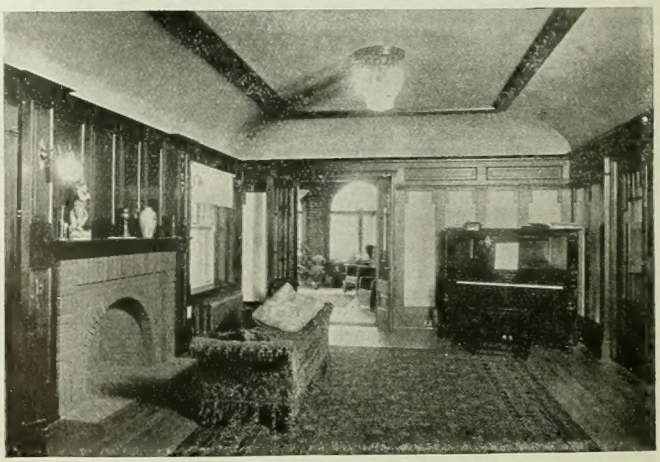


Fig. 6—Living room looking towards palm room. See fireplace and fireplace lights and central fixture.

Interior Views of House Described in This Issue

Fig. 7—Hall finished in quarter-cut oak. Hall is lighted by wall bracket lights.

Fig. 10—Sunroom on bedroom floor. Note deep bowl semi-indirect lighting fixture.

Fig. 8—Upstairs hall, showing central electric fixture and wall light, railing, leaded windows representing the four seasons.

Fig. 11—Palm room on ground floor. Note flat bowl semi-indirect lighting fixture. Hardware supplied by Aikenhead Hardware, Limited.

Fig. 9—Living room looking towards dining room. Note doors leading to hall do not disappear. Note also beautiful lighting fixture.

Fig. 12—Dining room, showing fireplace and combination direct and semi-indirect lighting fixture.

The toilet has wood floor and is fitted with stool, basin and hanging rails. The trim is Georgia pine.

A spacious larder, vegetable store, wine cellar, and cold room are situated near foot of rear stairs, for convenience of maids.

The furnace room is placed near centre of house and has a spacious coal store, 7 ft. 6 ins. by 35 ft., under the terrace. It is well lighted and has a capacity of one car load. The heating is supplied by a Spencer hot water heater. All ceilings are plastered, also the walls of toilet, playroom, and fruit room.

The vacuum cleaning machine is installed in a convenient place for dust removal, and has connections to all parts of the house. Height of ceilings is 7 ft. 6 ins. and 8 ft.

The whole of the floors, where not wood, have been laid on 6 ins. cinders, 3 ins. concrete and 1½ cement finish troweled smooth.

Ground Floor

The ground floor has joists of 2 ins. by 12 ins., with ⅞ in. sub-floor. All bearing partitions are 10 ins. by 8 ins. by 6 ins. The partitions running parallel with joist are 4 ins. by 6 ins., outside walls 14 ins. strapped, and the internal walls 9 ins. Walls butting on partitions are strapped to line with partitions.

This floor contains the following:

The palm room is 15 ft. by 15 ft., and has rustic brick walls, stucco sunk ceiling, tiled floor, and four circular windows, with transom lights. The finish is Georgia pine, dark shade. Access to this room is through glass doors from reception room and living room. It has a door leading to terrace.

The reception room is 15 ft. by 14 ft., and has three large windows, plaster cornices, and is decorated in the Adam style with plaster relief. Woodwork is enameled.

The breakfast room, 15 ft. by 12 ft., facing southwest, has casement window and is finished in plain white oak, natural finish. It has easy access from the kitchen.

Living Room

The living room is 22 ft. by 16 ft., and has a domed stucco ceiling with mahogany curb. The walls are finished in skeleton paneling with solid paneled frieze, bold cap mould and base. The fireplace is brick with two paneled pilasters and a centre panel above the shelf. The window at the side of the fireplace has a wide stool with radiator underneath. A pair of glass casement doors lead to the terrace on other side.

The sliding doors to this room are hung so that when open they will be seen in room, thus having a pleasing effect, instead of being hidden between the walls. Being glass doors with beveled plates, the idea is quite unique. All the woodwork is mahogany, with quarter-cut white oak floor.

Features of Dining Room

The dining room, 20 ft. by 14 ft., has a stucco ceiling with two paneled beams. The walls are paneled 4 ft. high to stool of window and above is open panels with half beam around walls. The trim is plain but effective. A swing door leads to the pantry and a pair of casements on to terrace. The two windows, on either side, four feet from floor, give space for furniture and radiator.

The fireplace is brick with oak mantel, paneled frieze, with drawers, etc. The whole of this woodwork is in quarter-cut white oak, fumed finish. Floors are quarter-cut oak. The doors leading to living room and main hall are glass, paneled, and have antique copper hardware.

Pantry Cupboards

The pantry has spacious cupboards, shelving, etc., with glass doors on both china and glass cupboards. The sink is located in the pantry with plate rack above radiator. There are also cutlery drawers, work table, etc. Woodwork is Georgia pine. There are swing doors to kitchen and dining room.

Kitchen, Maid's Room, Etc.

The kitchen, 16 ft. by 13 ft., is well lighted and roomy, with sink, linen chute, cupboards, etc. The dado rail is high, and the walls beneath are finished in burlap. There is a large store cupboard under the back stairs, and the space under sink is enclosed with cupboards.

The maid's room is off the kitchen and is 13 ft. by 9 ft. It has a large store cupboard under stairs also a long wall cabinet for glass and china, with a work table with drawers and trays beneath.

The rear entry has been sheeted in Georgia pine around walls and down stairs, to save the walls being damaged in entering the basement. Over the basement stairs and on a landing the refrigerator will stand, with waste pipe leading to drain in the basement. Off this landing is a rear porch and it will be useful during hot weather for domestic uses. Off this lead the steps to the garden and to the garage. The whole of this woodwork is in Georgia pine, and floors are also Georgia pine.

The telephone is placed in the hall between the kitchen and the breakfast room for convenience of maids in answering, and also the house 'phone.

The back stairs are roomy, well lighted, and Georgia pine from ground floor to attic.

Beautiful Front Hall and Staircase

The front hall is paneled 8 ft. high, also the vestibule, which has a seat, cloak closet, rubber box, and hat rails. The plaster arches and domed ceiling in vestibule, also the main hall ceiling are in stucco. The whole of the hall is paneled in plain detail with heavy coping and base over doors and pilasters leading to main doorways. The woodwork is quarter-cut white oak, fumed finish.

The staircase is quarter-cut white oak and has three large circular steps at the bottom leading on to quarter landing, one up to long level landing under main stair window, and return to first floor. Steps are 7-in. risers and 10-in. goings. The walls above string are paneled in the same detail as hall. Newels are 7 ins. by 7 ins., paneled, and the caps and rail are in two sections, the top part being finished in ebony.

A useful seat has been placed between bottom steps and enclosure to basement, with a leaded lay light above.

The main windows on stairs have leaded lights representing the four seasons—Spring, Summer, Fall, and Winter. The well is spacious and well lighted with two wall brackets and large ceiling drop light. The finish is same as the hall.

This staircase leads on to a spacious landing, which has a roomy sewing corner under archway with needlework locker, etc.

Off the stair landing through an archway and arched ceiling is the entrance to den and sunroom. In recess on this landing is placed the 'phone and also the house 'phone.

The den is 14 ft. by 11 ft., entered by a pair of glass doors. It has paneled walls, bay window with wide stool and paneled soffit. The ceiling is domed stucco. Trim is plain white oak, dark finish.

Sunroom

The sunroom, 15 ft. by 14 ft., is off this hall and has sliding sash on brass tracks. The walls are paneled 5 ft. high, with photo cap rail. Glass door leads on to deck of balcony, which is 7 ft. 6 ins. by 45 ft., and has a splendid view over ravine. The ceiling is of domed shape and stucco leading down to cap. Floor and trim are Georgia pine. This room is close to main bedroom, and can be used as sleeping porch if desired.

The Bedrooms

The main bedroom is 16 ft. by 14 ft. and has two spacious clothes wardrobes on either side of doorway

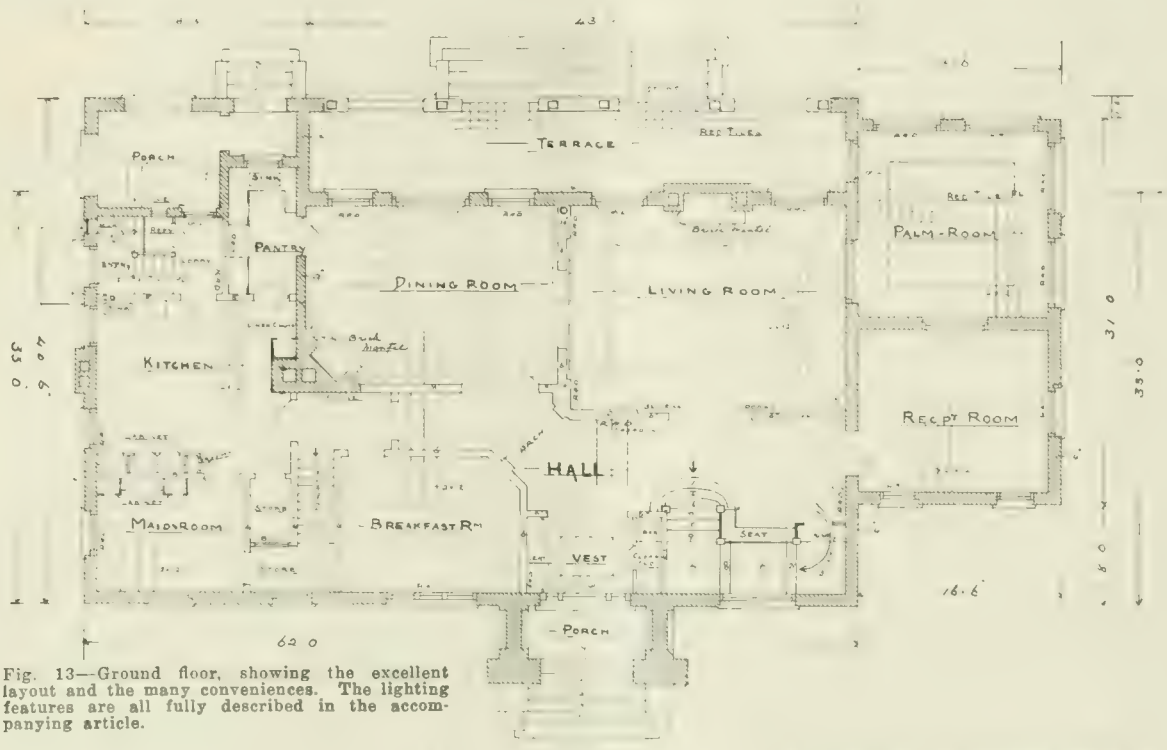


Fig. 13—Ground floor, showing the excellent layout and the many conveniences. The lighting features are all fully described in the accompanying article.

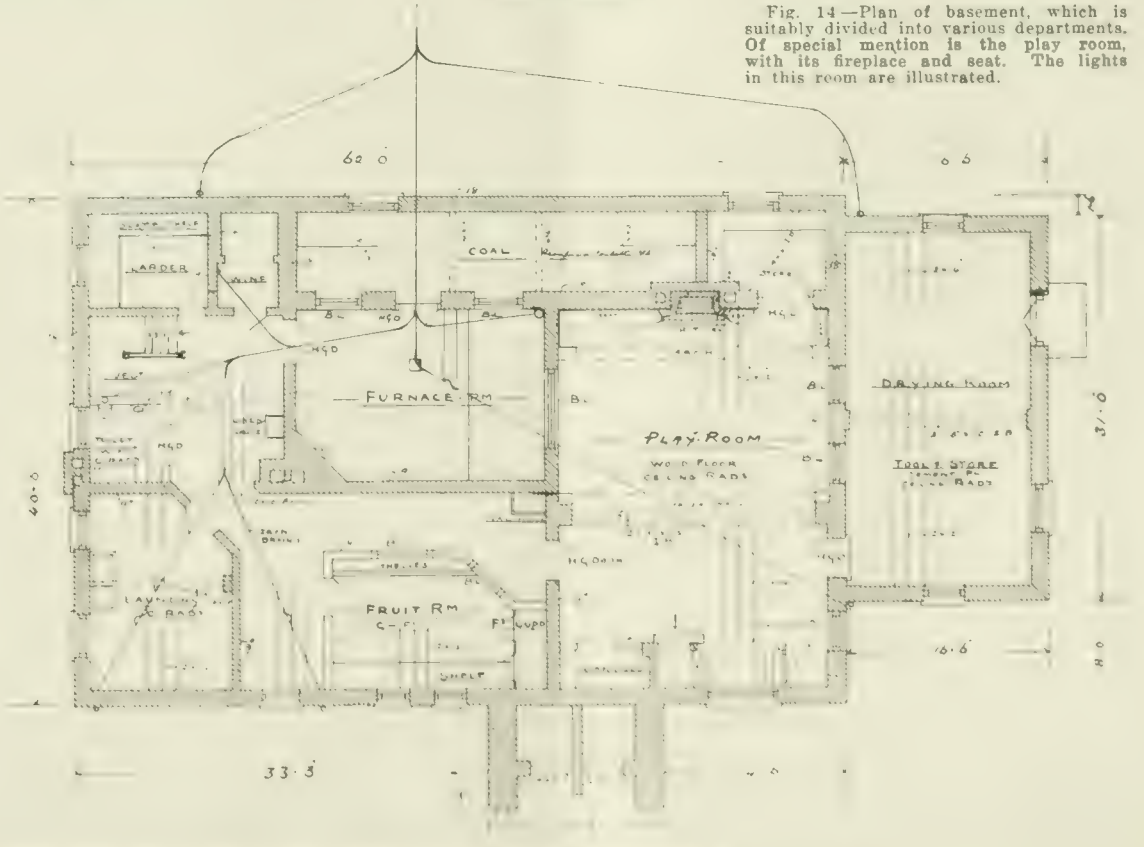


Fig. 14—Plan of basement, which is suitably divided into various departments. Of special mention is the play room, with its fireplace and seat. The lights in this room are illustrated.

connected by an archway. The space between wardrobe and dressing room is fitted with dressing chest, with trays and drawers, etc. The space in chimney has a fitted dresser with drawers and cupboards, etc., with casement above and electric glow lamps over.

The wardrobes have glass doors, slipper lockers, hat racks, and clothes rails, etc.

This room is finished in cream enamel and the wardrobes are walnut with enamel doors. The room doors are in quarter-cut white oak, fumed finish. Floor is oak.

Leading from this room are the dressing room and bathroom. The door in dressing room has full size beveled mirror.

Bathroom has tiled floor and walls to a height of five feet, and is fitted with bath, shower, pedestal basin and stools. The medicine cabinet acts as dressing glass and has loose glass shelves for cleaning, etc. It is white enamel finish.

No. 2 bedroom is 14 ft. x 12 ft., faces northeast, and leads on to balcony. It has two large clothes wardrobes, same as described above, connected with archway. There is an arched recess for the dresser, with lights on either side. The room side of door is fitted with beveled mirror for dressing. The finish is is cream enamel with mahogany door and wardrobes.

No. 3 bedroom, 15 ft. by 12 ft., has a southwest view, with large clothes closet. It is cream enamel finish with mahogany doors.

Main Upstairs Hall

The main hallway has two spacious linen presses, with trays, drawers, shelves, etc. They are enclosed with similar doors as rooms, to match, in quarter-cut white oak, fumed finish. The drawers are lined with red cedar. The hall has paneled pilasters with plaster archways, and bold picture rail runs around the landing and hallway. Leading off this hallway and in rear portion is a separate toilet, linen press as before described, and linen chute.

Bedrooms 4 and 5

No. 2 bathroom is fitted like one described above, with tiled floor and walls.

No. 4 bedroom, 16 ft. by 14 ft., has large clothes closet, slipper box, and hanging rails. It is finished in ivy green rubbed, with Georgia pine door.

No. 5 bedroom, 14 ft. by 12 ft., has large clothes closets, slipper box and hanging rails, etc. Finish is walnut, rubbed, with Georgia pine door.

The landing, staircase to attic and half landing are in Georgia pine, natural finish. On half landing there is a large closet for storage.

Layout of Attic

The attic floor contains two maids' rooms, trunk room, linen closet, hanging closets, and three-piece bathroom. The finish is cream paint with Georgia pine, natural finish. The landing is Georgia pine, natural finish.

Billiard Room in Attic

The billiard room is on this floor and is 26 ft. by 24 ft. with 8 ft. 6 in. ceiling. It has rustic brick mantel and red tile hearth, with wood cabinet mantel and cap rail. The windows are in recesses, arched, with radiator underneath. Finish is Georgia pine in dark shade. Floors are Georgia pine throughout. Off this room is a good storage and access to roof.

The whole of the work was designed by Mr. A. D. Vidler, 47 Manchester Ave., Toronto. The carpenter work has been under the eye of the designer, who has been constantly on the work, and has had the whole management placed in his hands.

He found the constant use of an Elliot woodworker saved the owner some dollars, both in carcasing and trimming. The decorations throughout are by owner.

Contracts for the various work were placed with and carried out by the following:

Masonry and brickwork, Thompson Bros.
Slater and coppersmith, A. Matthews & Son.
Plumbing and heating, Riley & Scott.
Plastering, A. Little.
Electric wiring, etc., Armour Bros.
Sidewalk and cement work, Thompson Bros.
Tile work, Canada Glass & Tile Co.
Hardware, Aikenhead Hardware, Limited, 17-21 Temperance Street, Toronto.
Rough lumber, J. B. Smith & Sons.
Interior trim, doors, etc., Cameron & Campbell.
Oak flooring, Seaman, Kent & Co., 239 Wallace Ave., Toronto.
Decorating and glazing, etc., Wm. M. Weekes.
Carpentering work, A. Vidler.
Weather strips, Pullman system, installed by Fisher & Sage.
Leaded glass work, Booth & McKay (Dom. Stained Glass Co.)
Electric fixtures, The United Incandescent Light Co.
Vacuum cleaning system, Tuec.
Exterior bricks, National Brick Co., Cooksville.
Mantel bricks, Don Valley "Eatonia" brick."

Electrical Installation

The illustrations show the fixtures in the various rooms. The lighting, telephone and bell systems were all installed by G. H. Armour & Co., electrical contractors, 21 Ferndale Ave., Toronto, and the fixtures were supplied by the United Incandescent Light Co., Ltd., 106 Jarvis St., Toronto. In view of the growing use of electricity, builders should become familiar with electrical installations.

There are throughout the house in the neighborhood of 100 lights, and about 65 different switches.

Knob and Tube Light Wiring Systems

The light wiring is done on the knob and tube system, with the exception of the service and the mains to the panel board.

The service, entering at the north side of the building, runs to the meterboard in the basement. After passing through the meter it enters a panel board which supplies the lower part of the house, and from there it runs in conduit up to the main board in the second floor hall. The mains are three No. 5 cables.

Provision for Reading Lamps and Heating Utensils

The chief feature of the lighting system is the careful attention to the location of the outlets, the number and position of the switches and the receptacles for reading lamps and small heating utensils.

Bracket Lights in Bedrooms

The bedrooms are lighted by bracket lights, one being placed by the bed and one on either side of the dresser. The latter are controlled by a switch by the door. All the main bedrooms have base-plugs for the accommodation of heating appliances.

Lighting of Lower and Upper Halls

The second floor hall has a large centre light over the well; the lower hall has four bracket lights, and there are two brackets on the main stairs. These are

all controlled by separate three-way switches for each group.

Combination of Centre and Bracket Lights on Ground Floor

The rooms on the ground floor are lighted by centre lights and also numerous brackets. The living room and dining room fixtures are controlled by two-section switches, which enable you to light part of the fixture if desired. The terrace, balcony and porches have ceiling and bracket lights, placed in convenient positions, the ceiling lights being controlled from the living, dining and palm rooms, and the sun room.

The Fixtures

Starting at the top of the house, the billiard room has a centre light, of the semi-indirect type, and two small brackets, one at each side of the casement windows. Off the billiard room is a cupboard or store room, which is illuminated by means of two small bracket lamps, each operating with a key switch.

In the hall in the attic there are two wall brackets and four switches. One switch is used for a vacuum cleaner, another is for one of the lights, and there are two keyway switches.

The two bedrooms each contain two brackets, one at each side of the dresser. Here, as is the case all over this floor, the glassware is plain white.

The lavatory, trunk room, and the different clothes closets each contain a single bracket.

The Second Floor

In the main hall, on the first floor, there is a large central fixture that hangs immediately over the light well. This fixture has an artistically shaped opalescent globe, by means of which a very pleasing diffused light is distributed throughout this hall, on the stairway, and also throughout the hall on the ground floor. The

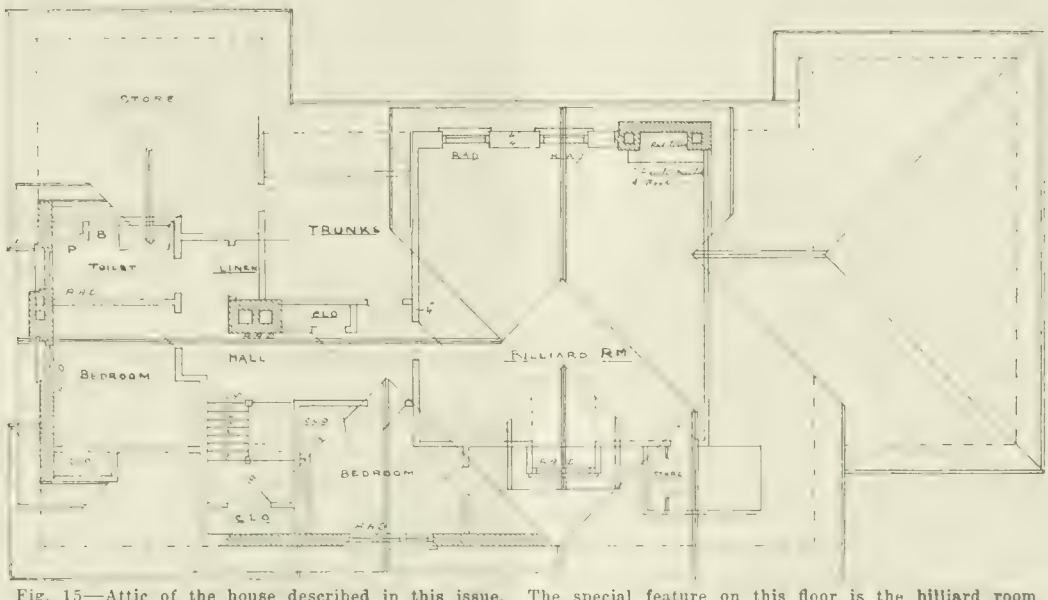


Fig. 15—Attic of the house described in this issue. The special feature on this floor is the billiard room with fireplace.

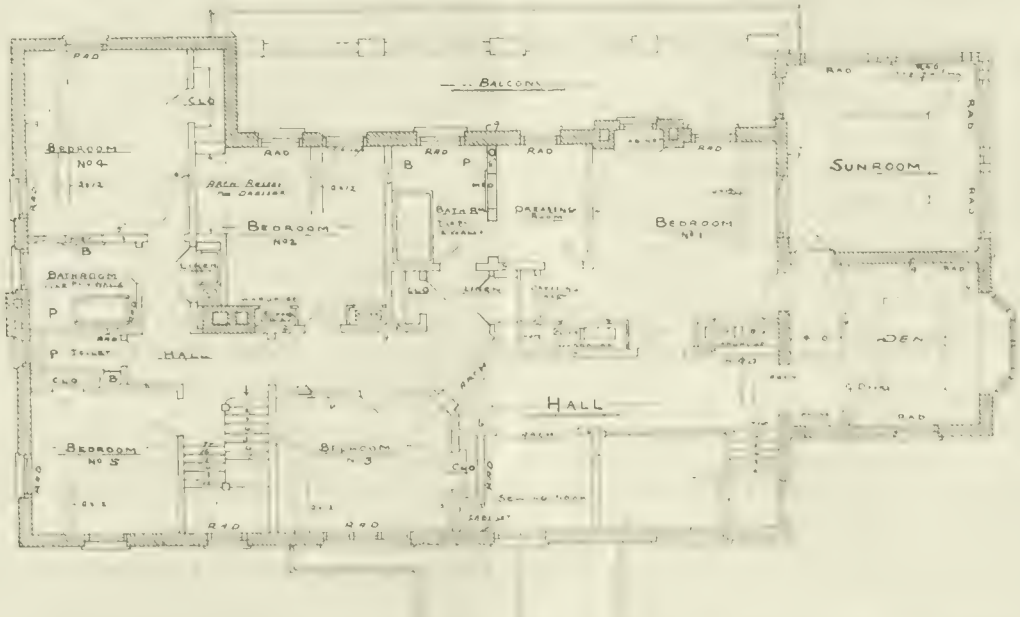


Fig. 16—Bedroom floor. Views are shown of the hall, sunroom and one bedroom, and the lighting fixtures used.

metal work is of statuary bronze and brushed brass, giving a very effective appearance.

The sunroom has one central fixture, of the semi-indirect type, with a white globe.

From the centre of the archway that divides the back hall from the main one is a small, round light, with frosted globe, and set in an antique bronze frame.

Each of the five bedrooms has three brackets, one at either side of the dressing table, and one immediately over the bed. In addition to these, in the main bedroom there is a ceiling bracket immediately in front of one of the wardrobes. Those at the sides of the dressing table are controlled by a switch placed at the doorway, while those over the beds are worked by means of a key switch. The shades are of different designs and colors to correspond with the purpose for which the room is intended. For instance, those in the room occupied by the son of the owner of the house are in blue, while those in the daughter's room are of a delicate shade of pink.

Each clothes closet contains one bracket.

The two bathrooms each have two brackets, one at each side of the mirror. The glassware here is of pure white. There is an outlet in each room for heating appliances.

A dressing room off the main bedroom has three brackets, each with a white shade.

The sewing room has one direct light and contains a plug for attaching a sewing machine motor.

The electrical contractor has so arranged matters that the light in the back hall of this floor may be turned off at any floor in the house, that is, a person on the ground floor, desiring to go to the attic can, before leaving the ground floor, turn on the light on the second floor, pass up the back stairs to the attic, and turn off the light when he gets up there.

The Ground Floor

The kitchen has a direct light suspended from the ceiling and also a bracket on the wall over the sink. A plug for the use of an electric iron is placed in a convenient position. The pantry, off the kitchen, also contains one centre light.

The central fixture in the dining room is a particularly handsome one. It is a combination of direct and semi-indirect lighting, and is shown in Fig. 12. As will be seen from the illustration, there are four lights set close to the ceiling, giving the direct lighting effect, and the bowl, or semi-indirect piece, is suspended below. The bowl contains three 40-watt lamps. The glassware is a creamy white and all metal parts are finished in silver. This makes a particularly handsome design. The fixture is controlled by two individual switches, which permits of only part of the light being turned on at a time, if this is desired. These switches are located, one at the entrance from the kitchen and the other at the entrance from the living room.

Besides this central fixture, there are two candle-effect fixtures that are located one at either side of the mantle. These, too, are finished in silver, and are so arranged that they lead one to believe that they are set into the top of the mantel shelf.

In th living room there is a large five-light central fixture, with blue and white shades, and the metal part is statuary bronze. This fixture is controlled by a two-section electrolier switch. In addition to this fixture there are two brackets, one at either side of the mantel with shades to match. There is, also, a base plug for a piano lamp.

In addition to the light that is thrown from the large fixture that hangs over the light well, the main hall is lighted by four brackets that are arranged in the paneling on the walls. Both the metal work and the shades on these brackets are made to match the large fixture referred to above. These brackets are controlled by a three-way switch.

The main stairway leading to the second floor is lighted by two brackets, one on each side of the leaded glass windows. These lights are controlled by a switch in the downstairs hall.

A particularly handsome 5-light fixture lights the reception room. This fixture is a candle effect one and is finished in silver.

Off the reception room is the palm room, and this room contains a semi-indirect type of fixture (placed centrally in the ceiling), with a plain white globe.

The Basement

In the basement is located the children's play room. This is lighted by four lights, placed in the ceiling at correct intervals. The shades are in Tiffany effect of a bronze color. Two switches control them, one switch for each pair. Placed alongside of these switches is one that controls a bracket that lights the stairway leading to the ground floor. All the other departments in the basement, with the exception of the lavatory (which has a bracket with white globes and finished in silver), are lighted with tungsten lamps, without shades.

There are other electrical conveniences, such as inter-communicating phones and a vacuum cleaner.

Inter-communicating and House 'Phones

A set of inter-communicating house 'phones is installed. There is a wall 'phone in each of the attic and ground floor back halls, for the convenience of the maids, and desk 'phone in the second floor hall by the den door. Provision is made for one in the garage. City 'phones are situated in the ground floor back hall and second floor hall, and for these a line of conduit to the basement is installed.

Bell pushes are situated in all the main rooms, connecting with a ten-point annunciator in the kitchen. A button in the main bedroom also rings a bell in the attic. The power for operating this system is supplied by means of a small transformer connected to the lighting circuit, which does away with batteries.

Electric Vacuum Cleaning System

A vacuum cleaning machine has been installed in the basement, central to the whole house, and the vacuum cleaner is of the Tuec make. Wiring has been installed so that the Tuec can be controlled from the various floors by means of lock-type push buttons of the flush type. There are in all ten outlets, four on the ground floor, four on the second floor, and two in the attic.

A three-inch exhaust pipe extends to the chimney from the machine in order to discharge the air and the light microbic dust to the flue, and thence to the outside air.

Three 2½-inch riser pipes have been installed in the building, connected to horizontal piping of the same size leading to the machine location in the basement.

Each riser has one or more outlets per floor, so that the whole building can be cleaned easily with not over 30 ft. of hose, the greater portion of the floor area being cleaned with a 25-ft. hose length.

TWO TILE HOUSES

Some Information on Tile Building Construction

See illustrations on pages 17 and 18.

TILE construction is finding favor among builders for certain forms of construction, the accompanying illustrations showing the wide range for which tile is adapted and some construction details.

Three methods are open to the builder: (1) a tile wall faced with brick, (2) facing with stucco, and (3) exposed tile wall.

In the brick faced or brick veneered wall the brick should extend into and become a part of the backing wall. If this is not done there are two separate walls. This should be avoided by an adequate knitting of the two walls together.

For stucco finish the wall should be plumb. The stucco must be evenly applied, and this cannot be done if the wall is not plumb. It is easy to even up a wall with plaster, but certainly not advisable. Stucco can be applied direct to the tile, the grooves keying the stucco to the tile.

Specifications for Stucco

The following specification for stucco has been prepared by the National Fireproofing Co.:

Stucco finish: Stucco work will be two-coat throughout. Tile to be thoroughly wet before applying first coat of stucco. Scratch coat will be at least one-half inch thick outside of tile surface, and will consist of one part Portland cement, three parts sand, with not more than 10 per cent. lime putty. First coat will be applied under pressure, and must be well scratched before it sets. Finish coat will be ¼-inch thick, and for cement color finish will consist of one part cement and two parts clean sand.

For white finish use white cement and white sand or marble dust. Buff or yellow finish may be secured by the use of yellow ochre. Lampblack added to the cement and sand will provide a dark tone if desired.

In the use of any coloring material, be sure to use only the best mineral pigments. For a rough sand finish the float is covered with burlap and finish coat should be quite dry. Dash finish is secured by throwing the mortar for the second coat on the walls with a wooden paddle. For pebble dash finish the mortar should be rather wet when placed on the wall, after which the pebbles are thrown against it.

Stucco may be made waterproof by the addition of one of the many damp-proofing compounds now found on the market.

Careful mixing and workmanship will insure a good finished work. In warm weather precautions must be taken to prevent the stucco drying out too quickly. This may be prevented by spraying the walls with water once or twice a day for several days after applying the finish coat.

There is no reason why an exposed tile wall should not satisfy the aesthetic sense. There is apt to be a variation in the shading of tile, but that adds to rather than detracts from the beauty of the wall. A little selection of shades and arrangement of them produces a very beautiful wall. If the surface of the tile is broken with horizontal markings the result is even more satisfactory.

Tile are used in such factories as the National Steel Car Co., Hamilton; J. R. Eaton & Sons, Orillia, and in hotels, residences, farm buildings, etc. The accompanying illustrations, reproduced by courtesy of the Sun Brick Co., Toronto, show a number of tile buildings, as well as methods of laying Denison interlocking tile. Other shapes of tile are also manufactured in Canada.

Advantages of Tile

The following advantages, reproduced from a book of the National Fireproofing, are applicable to tile in general:

It is composed of clay which has been burned in a kiln at a temperature of from 2000 deg. to 2500 deg. Fahrenheit.

A cubic foot of hollow tile weighs about 40 pounds.

Hollow tile is not only fireproof, but also sound proof, damp proof, and vermin proof. Buildings constructed of tile are warmer in winter and cooler in summer.

Structural steel work is preserved from corrosion. Hollow tile arches set in Portland cement is the best rust preventative known.

Mortar for Tile

The Sun Brick Co. gives the following specification for mortar for tile construction: The Toronto City Architect requires 1 to 3 cement mortar with 10 per cent. lime putty. Outside of Toronto, where loading is not excessive, cement lime mortar may be used.

"Buying the Key"

A term much used in the east end of London, England, where the competition for living accommodations is keen is "buying the key." For example, a flat house containing accommodations for five families is in course of erection, but before it is anywhere near inclosed inquiries are made by prospective tenants as to the name of the owner, the rental, and other particulars. If the building provides desirable accommodations the owner is besieged with offers from would-be tenants who are willing to pay as much as £2 (about $10) for the "key," or in other words—as there are no keys at this stage of the work—for the first choice of the apartments.—Building Age.

Fig. 1.—Independent Order of Foresters' Building, Oakville, built of hollow tile. The architect was G. R. Molesworth, Toronto. It was built by the Dickie Construction Co., Toronto.

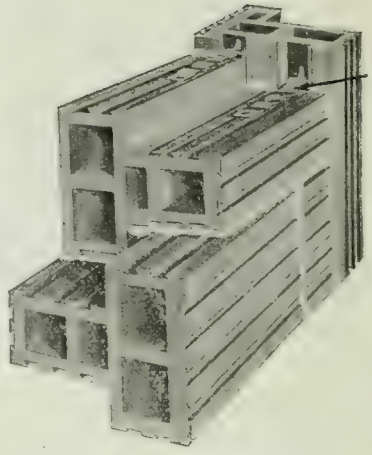


Fig. 2.—Method of application of window jamb with metal tie which is indicated by the arrow.

Fig. 3 (on left).—Manner of starting corner of 12 inch walls.

Fig. 4 (on right).—Spreading mortar bed 15 feet along the wall.

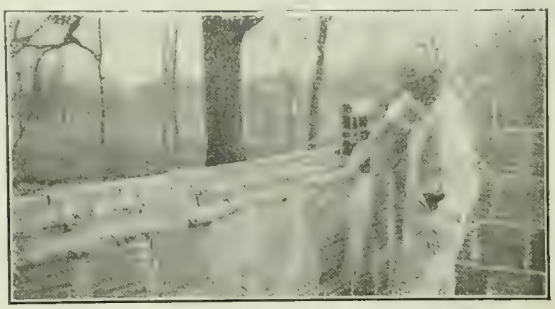


Fig. 5 (on left). Laying up 15 ft. of tile on mortar bed.

Fig. 6 (on right).—Section of 132 lineal feet 12 in. wall, 4 feet high, laid by two men in eight hours.

Fig. 7.—A tile window opening with the frame left out to show jamb reveal and sill construction.

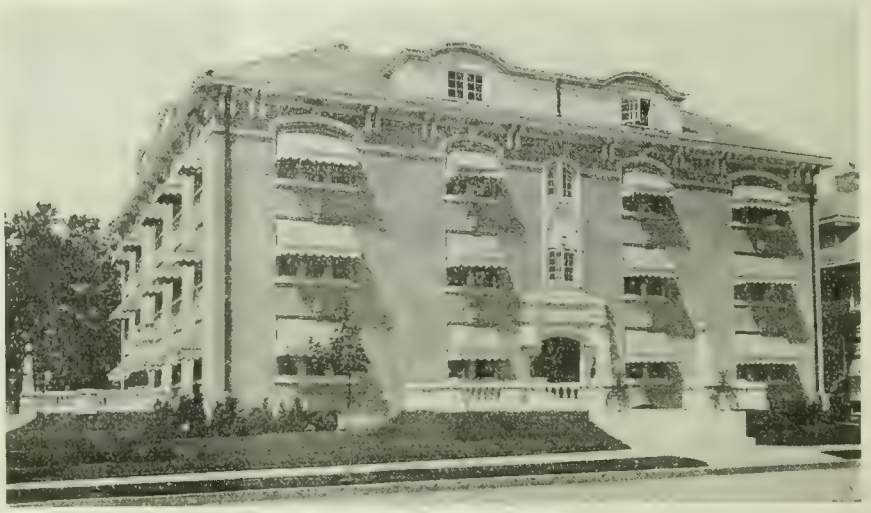


Fig. 8.—Tile apartment house with twelve apartments. The 8-in. exterior walls are tile faced with 4-in. brick bonded to tile with header courses. Interior division walls are tile. Plaster is applied directly to tile.

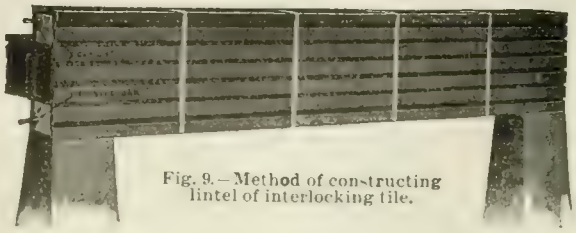


Fig. 9.—Method of constructing lintel of interlocking tile.

Two Pages Showing Interlocking Tile Construction

Fig. 10. Building showing flexibility of tile construction.

Fig. 11.—Method of laying interlocking tile.

Fig. 12. Tile used to form a balustrade, the balustrade being tongues of the tile.

Fig. 13.—Tile lintels at a short corner.

Fig. 14. Tile lintels, jambs and sills.

Fig. 15.—Tile lintel directly supporting a floor.

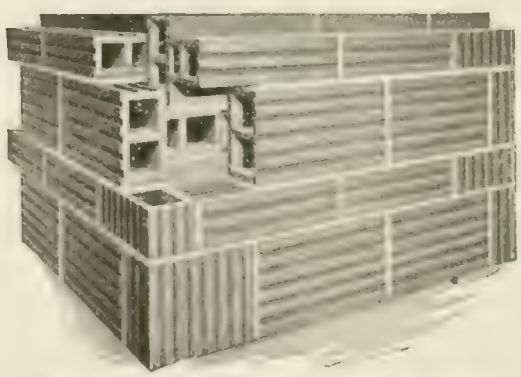
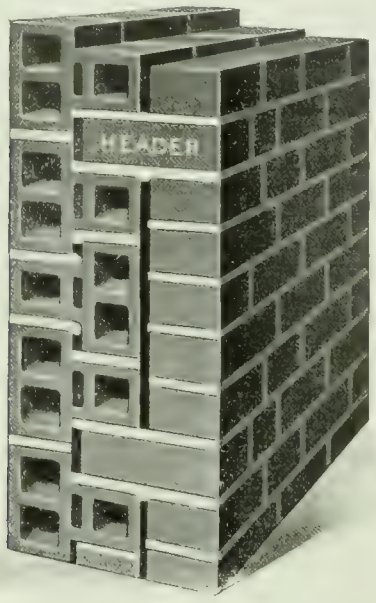


Fig. 16. Method of laying up corner posts. Two tile are omitted to show bonding.

Measuring Slate Work

In view of the discussion which has occurred at intervals in the past regarding the proper measurement of slate work, the following comments on the custom prevailing in the Manchester district, England, and which appeared in a London contemporary, may be interesting to Canadian builders:

Here slating is taken in yards super. Net area of the roof from eaves to the ridge by length is measured. The linear dimension of the eaves is taken for extra to eaves, and nothing is taken for the finishing course at the ridge. Hollows over 6 ft. super are deducted, and a labor item given for hollows, or the measurement for cutting given. Under 6 ft. super no



Method of facing interlocking tile with brick.

hollows are given or cutting measurement taken; the measurement of the slating stands as an equivalent.

Bevel cutting to gutters and walls is measured in feet linear for labor and waste. Bevel cutting to valleys and hips is measured for single cutting; that is, the two edges of the valley or hip are measured.

If hips are close mitred and pointed they are so stated, and verges are measured linear for pointing, slate creasing, or any particular finish. If slate and half is used for verges, hips or valleys, it is mentioned in the cutting item as feet linear. Single cutting to hips, including slate and half-ridges and hip tiles, is measured linear. Stops, mitres, finials, foot irons, etc., are numbered, stating any particular design or finish required.

Take Care of the Machinery

Just about now, hundreds of pieces of equipment throughout the country are being laid aside as the result of the coming of cold weather and consequent slackening of construction work. Much of it is being properly housed and cared for, but this condition is by no means universal.

The rush of finishing various jobs and in various ways preparing for winter make easy the neglect of simple precautions which may mean a decided saving of equipment. Some sort of shelter should be provided, at least a shed or a canvas cover, and machinery should not be stored without making sure that it is in such condition that it will not be damaged by rust or frost. Concrete should be carefully cleaned from all parts and fittings removed from boilers and engines. A coat of heavy grease over the metal parts will prevent rusting.

As time permits, each piece of equipment should be thoroughly overhauled, worn or broken parts replaced, boxes babbitted, engines overhauled and put in perfect running condition. It seems needless to point out the fact that the time spent in overhauling and repairing can be given much better now than when spring begins to make demands on one's time with the opening of another season. But there is a tendency to relax and let things go after a strenuous season.

In many cases the general overhauling will reveal the fact that present equipment must be replaced and in such cases it is well to secure the necessary information and if possible decide upon what is to be purchased. This again will save time at a period when time is more valuable.—Concrete-Cement Age.

Rough Work on Interior Walls

A method for making the composition which is put on walls to give them a rough appearance is described in a recent issue of The Painters' Magazine, in the following language:

This, at one time, was termed "mud work" and the material was mixed very stout from one-third to one-half by weight of keg lead, balance being made up with equal parts by weight of whiting and plaster of paris, thinned sufficiently with equal parts boiled oil and turpentine to be just barely workable with a stubby brush. Enough drier was added to keep it from sagging when on the wall and dry color used for tinting. While still wet it is gone over with a plasterer's smoothing or troweling board, that has been moistened with water. This is pressed lightly against the wall, then raised, so as to raise some of the paint in the shape of small pebbles, in other words, it is really enlarged stippling. When dry, the surface may be painted over with any desired color or tint. If done properly, it is very durable.

Postal Rates on Parcels to Soldiers

The Honorable T. Chase Casgrain, Postmaster-General of Canada, has been successful, as a result of negotiations entered into with the Imperial postal authorities, in effecting an arrangement with the British Government whereby parcels from Canada for Canadian soldiers in France and Flanders will be carried at the same rate of postage as applies to parcels from the United Kingdom for the Expeditionary Forces on the Continent, that is:

For parcels weighing up to three pounds ..	24 cents
For parcels weighing over three pounds, and more than seven pounds	32 cents
For parcels weighing over seven pounds, and not more than eleven pounds	38 cents

This means a material reduction on the cost of parcels, and it is hoped it will be a source of satisfaction to the Canadian public. This reduction has been brought about by Canada foregoing all postal charges for the conveyance of these parcels in Canada and on the Atlantic.

The public are reminded, however, in accordance with the circular issued by the Department recently, that until further notice no parcel can be sent weighing over seven pounds.

Toronto City Architect Securing More Information on Brick and Wood as Building Materials : :

STAFF ARTICLE

Builders generally will, no doubt, be interested in the methods adopted by the City Architect, Toronto, to secure authentic information on the possibilities of brick and wood. These are described in this article, which also gives data on brick and lumber

A YEAR ago, at the annual convention of the Canadian National Clay Products Association, Mr. W. W. Pearse, City Architect, Toronto, gave an address on Canadian brick, in which he referred to contemplated changes in Toronto's building by-laws. In this connection he stated:

"In looking up the New York, the Chicago, and Philadelphia by-laws, in fact all the American by-laws, I find that for ordinary brick laid in lime mortar they will allow you eight tons to the square foot of pressure. For the same kind of brick, laid in cement mortar, they will allow you 18 tons per square foot. In the Canadian by-laws we find they will allow for the ordinary kiln-run brick four tons to the square foot. For those laid in cement mortar, they will allow six tons. Further, you will find that on gravel they will allow you eight tons, while on clay it is four tons. These comparisons are startling. In other words, you find that they will allow you to put a greater pressure on foundations than on brick."

Mr. Pearse suggested that he would like to solve the trouble with Canadian brick. To do this he has set about making a systematic and thorough investigation of the problems presented.

Brick Plants and Equipment Inspected

Mr. D. M. Duncan, a well known ceramic engineer, was appointed to select brick from the various plants supplying Toronto with brick and to supervise tests of same. These brick were average brick, showing the possibilities of the available clay and what a builder might expect from any particular plant.

Brick Must be Tested

In this connection it is of interest to note that brick must be submitted for test before being marketed in Toronto. Data on the product of any plant is now available at the City Architect's office, Toronto, and builders will be given access to the information as soon as it is put into shape for easy reference.

All the tests were made at the School of Practical Science, Toronto. The specimens were numbered, so that only the person holding the "key" could tell to which plant any particular brick belonged.

Result of Tests

The following gives an idea of the load carried by some of the brick tested when the writer was present:

Size of brick	Crush load in lbs.	Class of brick
8.41x3.98x2.43	155,300	pressed
8.45x4.03x2.5	181,240	pressed
8.6 x4. x2.41	80,840	stock
8.47x3.89x2.43	147,100	pressed
*8.40x4.06x2.47	212,000	pressed buff
8.14x3.98x2.28	154,200	sand lime
†8.5 x4.02x2.4	128,260	sand lime
‡8.7 x4.08x2.42	80,970	sand lime
8.44x4.12x2.5	159,350	pressed buff
8.49x3.7 x2.4	113,600	stock
8.35x3.94x2.45	120,200	pressed
8.7 x4. x2.52	80,630	grey stock
§8.3 x3.97x2.41	214,000	grey wire cut
8.33x3.88x2.39	151,600	red press
8.34x3.96x2.38	97,900	sand lime
8.9 x4.11x2.58	99,050	grey stock

*Machine limit. Showed very slightly on back end of brick.
†Lime and clay present.
‡Large pebbles present. Sand should be screened.
§Machine limit. Not completely broken.

It will be seen that in the samples given sand lime ran from 80,970 to 154,200 lbs., clay stock brick from 80,630 to 113,600 lbs, wire cut sample went beyond the machine limit of 214,000 lbs. (pressure above 200,000 lbs. estimated), while pressed brick ran from 147,100 lbs. to the machine limit of 212,000 lbs. (pressure above 200,000 lbs. estimated).

Mr. Pearse is to be congratulated in his endeavor to correct the building by-laws of Toronto. Hitherto builders have been compelled to submit to rules which set the poorest class of brick as a standard. Now this will be corrected and all brick will be used according to the available shale or clay and the facilities for manufacturing.

Stresses Limits on Canadian Woods Being Raised

What Mr. Pearse is doing for brick he is also doing for lumber. On December 3 he met the Lumbermen's Section of the Toronto Board of Trade, placing before them the necessity of securing data on the strength and durability of various kinds of wood, in order to give them proper consideration in the new Toronto building by-laws.

In his address Mr. Pearse pointed out that at present all the information available was of United States wood, and full justice should be done to Canadian timber by having proper tests made of both stress and durability.

Stress Allowance of Canadian Woods

In Chicago the fibre stress per sq. in. allowed is 1,300 and in San Francisco, Minneapolis and St. Paul 1,200 per sq. in. In Toronto Mr. Pearse has, by special ruling, increased the allowable stress to 1,600 lbs. Long leaf yellow pine was given the same allowance as Douglas fir in the cities already mentioned. Short leaf yellow pine was allowed 1,000 lbs. per square inch fibre stress in Chicago, and 900 lbs. in Syracuse, but it is not tabulated in the Toronto building by-law. Norway or red pine in Cleveland was allowed 1,250 lbs. per square inch fibre stress. In Toronto the allowance was 1,200 lbs., and in Chicago 800 lbs. It is not tabulated in any other city. White pine in New York is allowed 800 lbs., in Chicago 800 lbs., in Boston 1,000 lbs., and in Cleveland 1,200 lbs. By Mr. Pearse's special ruling it is allowed 1,100 lbs. in Toronto. Spruce in New York is allowed 800 lbs., and in Boston 1,000 lbs. In Chicago and Cleveland it is not tabulated. In Toronto the

allowance is 1,100 lbs. Hemlock in New York and Chicago is allowed 600 lbs., in Cleveland and Baltimore 1,000 lbs., in several other large American cities 600 lbs., and in Toronto, by Mr. Pearse's special ruling, 1,000 lbs.

Height Allowances in Toronto

Discussing the heights of buildings Mr. Pearse referred to the allowance in Toronto. In dwellings, stables, garages and sheds, where frame walls are included the by-law allows a height of 35 feet, and where the buildings are of ordinary construction with brick, and frame interior, the allowance is 70 feet. In apartment houses, tenement houses, lodging houses, rooming houses, hotels, colleges, dormitories, hospitals, asylums and institutions for the care or treatment of persons, the allowance for ordinary construction, brick walls and frame interiors, is 35 feet. In factories, warehouses, office buildings, retail stores, dairies, etc., the allowance for ordinary construction with brick walls and frame interiors is 70 feet, and where frame walls are included 35 feet.

Generally speaking, Mr. Pearse said, wood was given fair treatment in Toronto, but he required more information in order that full justice might be done to all building materials in the new Toronto building by-laws. He asked the Lumbermen's Section of the Toronto Board of Trade to co-operate with him in securing the necessary accurate data. He would then be able to give wood its proper place in construction in Toronto.

The following committee of the Board of Trade was then appointed to act as suggested by Mr. Pearse: J. B. Reid, G. W. Boake, W. B. Tindall, A. E. Eckardt and F. H. Turner. A machine for making stress tests will be installed at the City Hall, Toronto, at an early date.

Cleaning Discolorations from both Brick and Terra Cotta

The writer, in "Brick and Clay Record," gives simple plan to remove unsightly deposits on face of modern fire-proof buildings in the cities

THE use of brick and terra cotta in building houses raises the question of the best method of keeping them clean, especially in certain parts of the country where smoke, soot and dust are freely distributed in the air.

Brick buildings may, in time, become disfigured through stain, scum, soot and dirt, so that they lose much of their original beauty. The material composing the face of the buildings is not injured by this coat of dirt, and it will work no harm to let it remain, but for the sake of beauty, owners are often anxious to clean off the surface to restore the original colors of the building materials. This is particularly true of very old buildings. Some old Colonial brick houses have been cleaned and restored to almost their original appearance, the clear, beautiful colors of the brick being brought out, in striking contrast to the dull surface, that time had produced.

A good many of these old buildings are disfigured by a whitish encrustation, technically known as efflorescence or "scum." The causes of this scum are numerous, but it is said to be most commonly caused by soluble salts in the clay. These salts become dissolved when rain falls on the surface and when the water dries, the salts are brought to the surface and deposited there in the form of a whitish scum. The scum is not laid over the surface evenly, but in spots, and the effect is very unsightly. In the course of time this encrustation will disappear, as all of the salts are dissolved by successive rains, but this process takes several years, and meanwhile the building presents a very unsightly appearance.

Another frequent cause of this scum is the use of faulty materials, especially of impure water in the manufacture of the brick. Occasionally it is due to careless storage of the brick where they can absorb soluble salts from their surroundings.

Removal of Efflorescence or "Scum"

But whatever the cause, the removal of the white efflorescence is difficult. If water is used for cleaning the brick, the excess of water may make matters worse by causing a much larger deposit of soluble salts on the surface. If the scum is very thick, it can sometimes be removed by scraping the brick with a hard dry brush when the surface is thoroughly dry. The use of hydrochloric acid in a very weak form frequently proves most effective. This should be applied with a brush, followed by a cloth or something that will dry the surface quickly. The chief thing is to wet the bricks as little as possible in cleaning them with the acid.

For removing layers of dirt on old brick, a solution of hydrochloric acid is the most popular method employed, but to clean the white scum from new brick, a much weaker solution should be adopted. The amount of acid and water mixture required for old brickwork varies according to the character of the dirt and its thickness, but usually one gallon of the mixture should be sufficient for each square yard of surface.

In applying the acid to brick surfaces the face of the building should first be washed off with a hose or by hand, using only clean water. This will remove a good deal of the loose dirt. Then the acid solution should be applied with a stiff, but not wire, brush, rubbing hard enough to loosen all the dirt. In some spots a good deal of scraping with the brush will be needed to loosen soot, grease and dirt.

When the whole surface has been thus treated to the acid mixture, the hose should be turned on to wash off all loose pieces and the dirt that has been left in a loosened form. One may use the hose freely, for in old brick there is little or no danger of white scum forming from a thorough wetting, all the soluble salts having been removed from such brick years before. The more powerful the stream of water the better, but it must not be strong enough to loosen the mortar between the brick. One must stop short of that.

Soap and Water Frequently Used

Soft soap is often sufficient for cleaning brick buildings where too hard a crust of dirt has not been allowed to accumulate. Soap has no injurious effect upon brick or stone surfaces, and yet it will often remove soot and grease mixed with dirt much quicker than acid. Build-

ings of red or buff can thus often be restored quickly to their original color by this method. Indeed, it is a question whether such brick buildings should not be treated with soap and water once every two or three years. Some owners wash their buildings every year to keep the surface from discoloration. This is particularly true in parts of the country where soft coal is freely burned.

The solution should be made of one pound of soft soap to four gallons of water, dissolved in warm water, and used while the water is still warm. This solution should be applied with a hard brush. Where the cleaning is done regularly, the soap solution has been sprayed over the building by a force pump with fair success. After washing with the soap solution, the surface should be cleaned thoroughly with pure water, either turned on by a hose or thrown on by hand. The soap must all be removed before the building is allowed to dry, or otherwise it will appear streaked and discolored.

Soot Removed by Application of Hose

If the discoloration of the brick walls is caused by dust instead of soot and grease, it can often be removed by washing a few times a year by pure water from a hydrant, hose or force pump. A good many keep their brick buildings in fine condition by this simple process. Then there is little occasion to resort to the soap or acid solution, accompanied by hand scraping. The closer and denser the character of the bricks, the less difficulty will be experienced in keeping the surface clean. Open, porous brick absorb and retain dirt, grease and soot.

Terra cotta buildings can be cleaned in almost the same way as brick structures, but special care must be taken with terra cotta not to injure the face of the blocks or tiles. Much of the modern terra cotta is finished off with a close, dense face, but with the main part of the mass open and porous. If this dense face is destroyed, and the porous body beneath laid bare, it will be almost impossible to keep the building clean. Soot, dirt and grease will all accumulate on the surface, and the rains will not wash them off. Consequently, whether one uses acid, soap solution or simply clean water for washing the surface, the brush must not be applied so hard as to scrape off the dense surface face. Likewise the acid must be very weak. Terra cotta as a rule does not offer as much lodgement for dirt as a brick surface, and it requires less washing. The rains will often remove the discoloration. Still there are times when it will pay to wash the terra cotta to restore it to its primitive purity of color.

Acetic acid is more satisfactory in some ways than hydrochloric acid for removing dirt and stains from buildings, but it is more expensive, costing about two to three times as much. It is equally effective in loosening and removing dirt and grease, but it has no corrosive effect upon the brick or terra cotta. On account of its non-corrosive quality, buildings that have been treated with it remain clean longer than when the stronger hydrochloric acid is used.

The Element of Error in Estimating

Much has been written on the subject of estimating and the importance which it holds in the success of the building contractor. The element of error in estimating, due to carelessness or other mistakes not arising from inability is a recurring one, but among careful men this is far less frequent than commonly supposed. In a recent monthly letter to the Building Age of the secretary of the Master Builders' Association of Boston, the statement is made that "an estimate far below a group of figures—a frequent happening—can only mean one of three things:

"First: An error on the part of a man doing good work—and who will do the job properly and suffer by his error.

"Second; An honest price from an honest man who gives the best value of which he is capable, but whose work is low in quality.

"Third: A cut-throat price from a cheap man who will save or skimp where he can, trust more or less to luck to come out square, and who cares little for results if he can 'get by.'

"The two latter are the usual low bidders, and the last is the man commonly found surprising everyone by his low figures until finally he is pushed to the wall and another of the same kind takes his place."

Cost of Drilling Anchor Bolt Holes in Granite for Quebec Bridge

The following is a detailed statement of the cost, for labor and material, of drilling the anchor bolt holes in granite for the Quebec Bridge. The holes were drilled with a "Calyx" core drill, the diameter of the drill being 4½ ins. and that of the core 3⅜ ins. The number of holes drilled was 176, and the number of linear feet drilled 800, or an average of about 4.6 ft. per hole. The holes were drilled through solid granite. The costs given include every item except power for operating the drills, the drills being driven by a 5 h.p. alternating-current, electric motor. It will be noted, from the following data, that the cost of drilling, including equipment but excluding power, was $2.50 per linear foot.—Engineering and Contracting.

Labor

Dougherty, at north shore	$ 263.60
White, at north shore	238.25
Brown, at north shore	16.50
Mooney, at north shore	51.80
Raymond, at north shore	72.10
Dougherty, at south shore	291.80
White, at south shore	285.40
Total labor	$1,219.45
Traveling expenses, Dougherty	40.22
Total	$1,259.67

Material

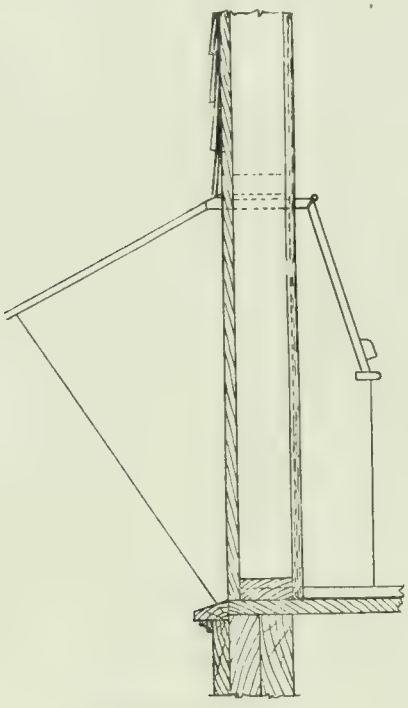
Calyx shot drill	$ 450.00
Belting, 12 ft. 3 ins.	1.76
Shot, 2,000 lbs.	100.00
Express on shot	3.00
Drill spindle, 4 ft. x 6 ins. long, one	22.85
Shot feed complete, one	4.50
4-in. shot bits, eighteen	117.00
1-in. stop cocks, two	1.86
4-in. core barrel plug, one	15.50
4-in. x 2-ft. core barrels, two	16.00
16-ft. 3 in. betting and rivets	9.53
Total material	$ 742.00
Total labor and material	$2.001.67

Carpentry and Woodworking

Construction of a Wood Box

The accompanying illustration, reproduced from the American Carpenter and Builder, shows how to construct a wood box between a woodshed and kitchen. The writer of the description says:

"I always make them double thickness with paper between and weatherproof lid outside. They will let



Construction of a wood box

in a great deal of cold if not properly built. This one will hold quite a little wood, which is convenient to get from the inside, even to the last stick.

The way to get the length and cut for bridging is shown in Fig. 3. The width of joist on the tongue and space between joist on blade, as shown, 7¾ on the top edge of piece and 14¼ on bottom.

New Idea in Fuming Oak

A new process of fuming oak was described in a recent number of the London Timber Trades Journal. The usual way of evaporating ammonia for fuming has been to allow it to drop from a tank outside the vat on a series of slides inside, and finally into a jar on the floor, this dripping process extending over a period of from twelve to twenty-four hours.

The new method is to place in a long, shallow pan about one-third the quantity of ammonia usually required, and place this over a coil of steam pipes, says the Hardwood Record. The advantages claimed for this way over the old method are that a more uniform color is obtained, the work is done in half the time, and much less ammonia is required.

Definition of a Den

What is a den?
A den is when
The broken chairs,
The rugs with tears,
The pictures cracked,
The table hacked,
A tickless clock,
Desk that won't lock,
Are gathered in a heap by Ma,
And put into a room for Pa.

Improvements to Make Hospital Fireproof

Hamilton City is erecting a large new Queen Alexandra wing to the city hospital. Recently the hospital sub-committee, consisting of T. H. Pratt, chairman, Dr. Langrill, and Controllers Morris and Robson, was in session to deal with a letter from Stewart & Witton, architects, recommending certain changes and improvements in this wing.

Fire Escapes Should Not Pass Windows

Mr. Witton, who was present at the meeting, explained his recommendation that the hospital wing in question be made fireproof, by stating that fire escapes on the outside of buildings such as the hospital gave a false impression of safety. This was the case especially where the fire escapes passed the windows of a building through which it was possible for fire to emerge and thus cut off the way of escape.

Fireproof Corridors Recommended

The remedy recommended for overcoming this difficulty was that fireproof corridors be installed on each floor of the Queen Alexandra wing, at a cost of about $1,400 a corridor. These corridors would be in direct communication with the outside and would in a sense be safety zones to which patients could be rushed in case of fire.

Fire Tower Suggested

The fire escapes, as in general use at the present time, were condemned by the architect as having been designed for non-fireproof buildings, and he suggested that a fire tower be installed at the Queen Alexandra wing. This tower would consist of four brick walls,

containing reinforced concrete stairs, and would have one opening communicating with each floor of the building.

Have Doors Open Outward

The report of the fire chief contained the recommendation that the doors of the children's ward be changed to open outward, and also that the elevator and dumb-waiter shafts be closed.

How to Shingle Fast

In a recent issue of Building Age "O.K." gives the following method for fast shingling:

We distribute the shingle bunches over the roof as Mr. Hobart shows in one of his pictures, but we do not always carry them up at one point as the Hoosier did. Sometimes we draw them up with a pulley and line before the last of the roof sheathing is nailed down, more especially if there are a great many bunches to go up, or if the building is a tall one. Then we break the bunches apart and stick them between the roof boards—just a handful in a place.

Fig. 1.—The Shingle-jack in Use Upon a Roof

If we have not already made one, we construct what we call a "shingling-jack." There are different ways of making these, but I always construct them after the pattern of which I enclose drawings. I make them of a 1 x 8-in. piece and in the lower end at A of Fig. 1, drive a row of 8d nails and break off the heads. In the end B, I drive a row of shingle nails and the jack is then ready for use. Fig. 2 represents a rear view of the device.

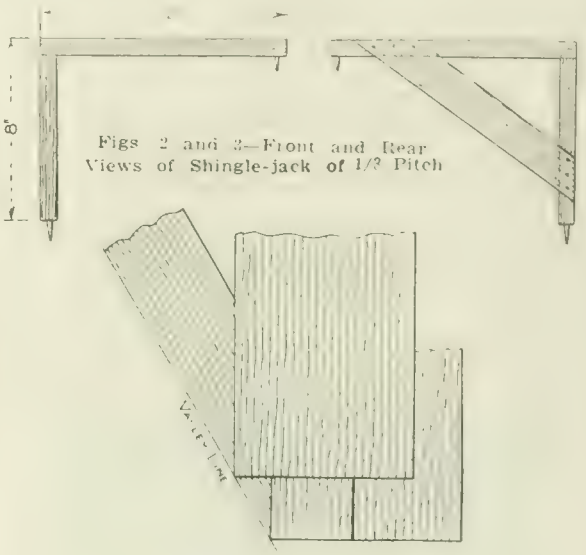
For a hatchet we use a lath hatchet and some of the boys make use of a small gauge fastened with a set-screw, but for myself I had the blacksmith drill three holes, 4 in., 4½ in. and 5 in. from the pole end; thread them and then thread a plug to screw into them. With this device I can lay shingles 4 in., 4½ in. or 5 in. to the weather, but the gauge can be set anywhere, though it sometimes works loose and slips. I like the plug better.

As the ordinary pockets in a carpenter's apron are unhandy to get into, I use a single pocket fastened to a belt and wear the pocket over my left hip. I put plenty of logger's calks in my shoe soles and am then ready to shingle any old roof up to a two-thirds pitch without any staging.

It is some awkward starting the first corner and the double course will bother some if the roof happens to be steep. We will therefore suppose that the carpenter has gotten over these slight difficulties and is ready to go to shingling right. Set the jack on the shingles already nailed and sit down on it good and hard. Plant the right foot on the roof below you and draw the left foot back almost under you, letting the leg lie flat on the roof. Fig. 3 of the sketches affords an idea of the position.

Using the Mouth as a Nail Carrier

You may feel a bit timid at first but you will soon get over that as I have never had a slip as yet. Do not put so many nails in your mouth but what you can handle them well with your tongue. Now turn two nails between your lips with the points out—remember always



Figs. 2 and 3.—Front and Rear Views of Shingle-jack of 1/3 Pitch

Fig. 4.—Showing How to Shingle a Valley

two. You will never be a shingler if you do not learn to handle two nails at a time.

Now draw out a handful of shingles; lay them on your left hand and take the two nails from between draw them up against your body and you can tell by the feel of them which is the widest one. Draw it out and lay it with the corner of the last one nailed down. Reach out with the hatchet and hook the gauge under the butt of the last course nailed on and lay the farther corner of the shingle against the pole of the hatchet. Hold it there with the hatchet while you reach with your left hand and take the two nails from between your lips. Nail the farther edge first and then the edge nearest you and you are ready to repeat the operation unless you think that shingle is too wide for only two nails; if it is, put in two more.

Never drive a nail in the middle of a shingle. Now take the next widest and lay it on top of the one you have just nailed; then the next widest on top of that and repeat this operation until you have as many courses started as you can handily reach. I generally carry seven courses across the roof at one time.

No Lost Time Staging

Some reader will be sure to ask in what way is this better than the other method. In reply I say that no

time is lost in staging up; you are not running back and forth lining up straight edges, but are sitting on the jack nailing shingles all the time. A carpenter can lay 5,000 a day by this method and a regular shingler 8,000.

I am also sending a sketch, Fig. 4, showing the proper way to lay a shingle in a valley. After the tin has been fitted and nailed, strike a line on both sides, and as you lay the course out to the valley be sure that the corner of the last shingle touches the line you have struck. Now select a good shingle about 8 ins. wide and lay the lower corner against the corner of the last shingle nailed, with the edge lying along the line of the valley, all clearly indicated in the drawing. Mark the edge where it crosses the edge of the shingle just nailed. Take the hatchet and trim to the lower corner, or if you want to be economical, you can tack a bunch of them together with a shingle nail and cut them with the saw, using the corners on the hips if you have any.

Now lay the shingle just as it was placed when you marked it with the fibre running up the valley and the end wood against the other shingle and not the end wood against the line as I have seen it, as that necessitates double coursing all the way up the valley and makes an unsightly job.

New Vestibule Telephone Outfit

The Connecticut Telephone & Electric Co., Meriden, Conn., have just placed upon the market a new vestibule telephone outfit. This is known as their cordless type. As will be noted from the illustration this telephone has a concealed transmitter and receiver; to operate it is simply necessary to push the button and

New vestibule telephone outfit, manufactured by Connecticut Telephone & Electric Co.

talk facing the vestibule telephone, just as if in conversation with your party in front of you. The person talking from the suite can be heard for a long distance from the vestibule telephone, due to a specially constructed loud-talking receiver. There is nothing on the face plate except the card holders and buttons. Therefore, there are no cords or receivers to be stolen, no hooks to be broken.

This outfit is entirely new and novel; nothing of its kind has heretofore been placed upon the market. The perforated sound openings on the front of the plate are protected by a bug-proof brass screen.

The Connecticut Company are distributing their new bulletin, No. 50, describing this material, which will be sent on request.

All things are comparative. Wood that is "bone-dry" carries about 7 per cent. of moisture.

Painting Gas Logs in Imitation of Wood

In discussing the question as to what to use for painting the logs of gas radiators in imitation of wood, a recent issue of the Painters Magazine contains the following: These logs are usually bronzed with copper bronze or green bronze, and then blended in with colors, so as to imitate the bark of certain trees. To give certain effects, such as the bark of birch or maple shows, asbestos fibre is attached in certain spots.

The colors used, or, rather, the pigments employed, must be resistant to heat, as, for instance, umber, raw or burnt. Indian red, mineral brown, oxide of chromium green or copper green. The paint must be made with a medium or binder of silicate of soda, because there is no medium containing oil or gums that will be able to stand such degrees of temperature as are required here.

Building Permits for the Month of November

Eastern Cities

	Nov. 1915	Nov. 1914	1915	1914
Maritimes—				
St. John	$ 40,250	$ 36,350	$ 323,400	$ 498,400
Sydney	15,850	3,000	195,522	108,723
Halifax	90,250	48,655	936,857	801,540
Quebec—				
Montreal	435,745	364,710	5,441,271	17,277,311
Maisonneuve	536,500	99,000	769,200	2,507,240
Lachine	70,625	64,115	584,440	313,368
Quebec	349,275	76,156	2,465,026	2,450,900
Verdun	17,175	3,500	153,320	.....
Ontario—				
Brantford	12,635	7,225	224,085	426,510
London	75,470	50,705	1,183,360	1,807,180
Ottawa	162,125	84,495	1,573,710	4,332,600
Port Arthur	720	31,400	82,549	1,229,099
St. Catharines	45,996	28,245	395,551	760,353
Toronto	799,395	738,073	5,955,026	19,858,443
Welland	32,464	7,488	171,597	335,668
Woodstock	4,672	7,675	80,631	103,099
St. Thomas	7,050	19,975	134,165	375,966
Hamilton	93,165	709,270	1,353,613	2,984,006
Stratford	6,561	2,995	205,835	440,565
Peterborough	5,005	2,135	96,990	449,140
Kingston	19,770	4,829	203,460	281,497
Smith's Falls	.....	.....	13,300	114,950
Galt	160	6,700	140,149	302,780
Chatham	17,700	2,885	198,889	139,515
Sudbury	500	5,800	99,565	537,780
North Bay	1,900	31,885	115,228	333,325
Total, 26 East. cities	$2,840,958	$2,437,266	$23,096,739	$58,769,958

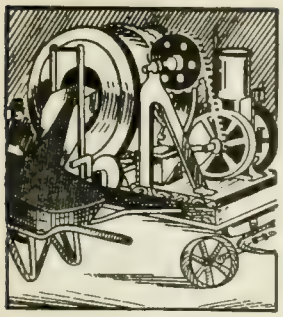
Western Cities

Manitoba—				
Winnipeg	$ 42,850	$ 260,900	$1,820,500	$12,826,400
St. Boniface	.....	1,830	209,560	803,552
Alberta—				
Edmonton	1,500	39,200	300,525	4,675,427
Lethbridge	3,410	3,025	57,180	340,450
Red Deer	125	600	15,285	42,515
Medicine Hat	.....	10,420	60,590	1,799,196
British Columbia—				
Vancouver	13,800	1,584,475	1,566,099	4,444,711
New Westminster	4,820	9,275	83,575	254,519
Victoria	10,950	19,135	227,050	2,133,160
Oak Bay	350	.....	20,550	282,716
Kamloops	.....	2,360	11,565	154,910
Nanaimo	985	.....	50,582	130,365
Saskatchewan—				
Yorkton	125	.....	48,235	60,695
Moose Jaw	9,050	9,200	77,722	447,610
Regina	2,100	18,700	463,665	1,763,875
Weyburn	1,000	4,700	22,225	329,450
Total 16 West. cities	$ 91,065	$1,963,820	$ 5,034,908	$30,489,551
Grand total, 42 cities	$2,932,023	$6,401,086	$28,131,647	$89,259,509

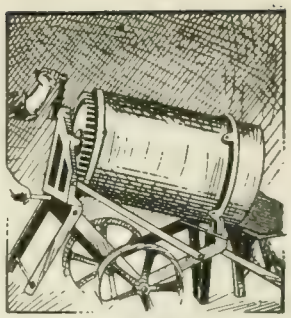
(Courtesy Financial Post.)

How to Make Holes in Glass

Cover the glass with clay or putty for a few inches around the place where the hole is wanted. With a pencil or small stick, make a hole in the clay or putty the size of the hole required. Pour this hole full of melted lead.



Concrete Department



Treatment to Prevent Concrete Floors Becoming Dusty

We are in receipt of the following letter from a subscriber to The Canadian Builder and Carpenter, and we publish in this connection information received from companies familiar with the prevention of dust on concrete floors. If any readers have any additional suggestions to offer we shall be pleased to receive same and forward it to the subscriber. We shall be glad to give the name and address to any manufacturer of the materials to which the subscriber refers.—Editor.

Letter from Subscriber

Gentlemen:

Will you please answer at your early convenience the following. The floors in the Public school here were put in of concrete some three years ago and have never given satisfaction owing to the sand constantly loosening, and thereby causing the floors to be dusty with very little use.

It has got so bad of late that the drain pipes are in danger of being clogged up.

If you know of any firm manufacturing a material that can be applied over the present floors I shall be pleased if you would turn this letter over to them in order that they can send samples of material and cost of same.

If you should happen to know anything regarding the firm or material mentioned would be pleased to have your advice.

Treatment Suggested by Mr. Rhodes

Dear Sirs:

We have your letter with a copy of a letter from one of your readers, asking for information on how to keep a concrete floor in a Public school from dusting.

To begin with, this floor evidently was not well constructed and it may be that they will be unable to make it dustless by any preparation being applied. A very cheap method to try, and one which will prove satisfactory if anything will, will be to paint this floor with a solution of silicate of soda, about one part of it to about four parts of water. To do this the floor should first be thoroughly washed and dried, then this solution painted over the surface and allowed to stand for about twenty-four hours. A second and third coat should be applied, leaving it stand about twenty-four hours after each one. The floor should then be practically dustless for a long time. If, after a couple of years of use, it seems to become a little dusty again, it would be wise to repeat the operation.

You might also impress upon your reader that the dusting of concrete floors is invariably caused by not making a rich enough mixture of concrete at the time of construction, by using a sand which has got a large percentage of loam in it. By selecting good, clean aggregate and making the concrete of a proportion of 1 part of cement to 2 parts of sand and 3 parts of gravel, it is practically impossible to get a dusty floor.

Trusting this gives you the information desired for your reader and also assuring you that we are very glad to answer these questions at any time, we are,

Yours truly,

CANADA CEMENT CO., LTD.

Per (Signed) G. F. Rhodes.

Information from American Portland Cement Manufacturers' Association

We are in receipt of your letter of November 23, together with a copy of a letter from one of your subscribers, requesting information relative to the method of preventing the dusting of concrete floors.

A very satisfactory method of treating floors such as described in your subscriber's letter is with a sodium silicate solution. This method of treating concrete floors, besides giving satisfactory results, is also inexpensive.

Enclosed you will find instructions as to the proper method of treating concrete floors with sodium silicate.

If we can be of any further service to you in the future, do not hesitate to call upon us.

Very truly yours,

INFORMATION BUREAU,

(Signed) E. K. Borchard, Chief.

The instructions given are as follows:

Mix one part water-glass (sodium silicate) of 40° Baume, with three to four parts of water, total four to five parts, depending upon the porosity of the concrete. The denser the concrete the weaker the solution required.

Apply with a brush one coat evenly over the entire surface. This will penetrate into the pores of the concrete. Allow the concrete surface to dry; after 24 hours apply another coat the same as before. Again allow the surface to dry and apply another coat. If, after 24 hours, the third coat is not flush with the surface in any part of the floor, apply another coat. That which remains on the surface can be readily washed off, thus evening up the floor. That which has penetrated into the pores has come in contact with the alkalies and salts in the concrete and formed into an insoluble, very hard mineral glue.

The Stinson-Reeb Builders' Supply Co., Ltd., Montreal, state in a letter:

Replying to your letter, wish to state that the concrete floor referred to in your letter was apparently of poor construction, and an inferior grade of sand was used, or the cement was overloaded with sand. If the floor was put down in winter time there is just a possibility of the concrete being affected by frost. However,

so long as the floor is solid the question of dusting can be quite easily remedied.

According to the description of the floor given in your letter, it is apparently in very bad shape, and it is wearing too much to apply a cement paint. We believe it would be better to put down a mastic flooring such as our "Resolite," as described in the enclosed leaflet.

Wash for Waterproofing Concrete

The following wash is recommended by a writer in Concrete-Cement Age as effective waterproofing for cisterns, silos and similar structures.

A stock solution is made of 1 lb. lye, 5 lbs. alum and 2 qts. water. A pint of this solution is added to a bucket of water and 10 lbs. of cement, making a paint-like mixture to be applied with a brush.

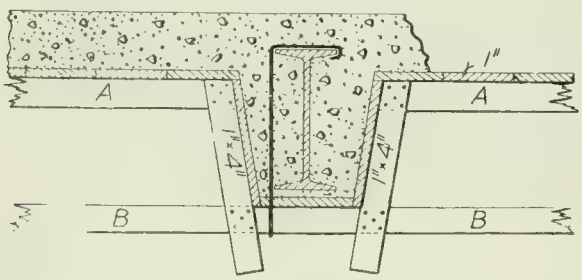
This is a modification of the well known Sylvester process and depends on the precipitation within the pores of the concrete of insoluble alum soap or alumina hydrate, or both together.

Supporting "Forms" for Concrete Beams

In the construction of the Toronto Technical School Norcross Brothers used a bent wire to support the forms for concrete beams. The accompanying illustration, reproduced from Building Age, shows the use of practically the same wire support, which was used in the construction of a Winnipeg building. When the beams set the wires are cut, leaving the major portion of the wire in the concrete.

The following description refers to the accompanying illustration:

"I am sending a sketch which may be of interest to the correspondent in question. The stirrup made in the shape indicated is just wide enough to take a 2 x 4. It can be made on the job, usually, of a ¼-in. or 5/16-in. round iron, bent in a vise, and with the ends square,



and these are then turned under the flange of the I-beam with a hammer. They are placed 2 ft. on centres along the beam and 2 x 4's are nailed in the position shown by AA to form the slab. At B is shown one of the 2 x 4's which run through the stirrups from beam to beam. The "forms" of the slab are then fixed in the manner indicated. The 1 x 4-in. cleats are nailed to the 2x4's, as shown, in order to elevate the slab forms to the required height."—A. H. B., Winnipeg.

Making a Cement Joint Waterproof

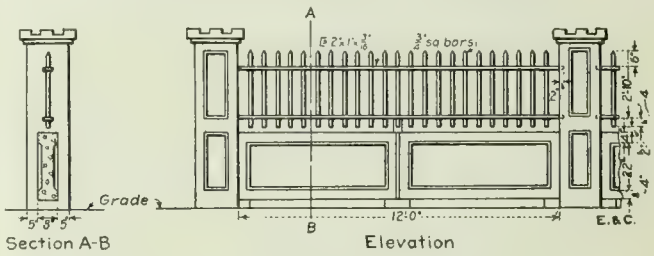
One of the points that has recently been raised in connection with efflorescence, is the difficulty of securing a waterproofing compound which can be mixed with the cement that is used in the mortar joint. It is said that the United States Army engineers have long used the following mixture for waterproofing cement, and there is little reason to believe that it will not work with cement mortar joints:

To a mixture of one part cement to two parts of sand, add one pound of alum to each cubic foot. Mix these well, and then add water to which has been added three-quarters of a pound of soap to each gallon. This combination, it is said, does not materially affect the strength of the cement, and will be safe to use as a mortar joint.

To wash down, use a mixture of one pound of lye and two pounds of alum in two gallons of water.

Design and Cost of Concrete Fence

The accompanying cost data, Table I, and the illustration given, pertain to the concrete and steel fence at the Georgetown Reservoir of the Washington Aqueduct. This fence was designed by Captain Hannum, Corps of Engineers, U. S. Army. It was described in Professional Memoirs by Frank D. Holbrook.



A line drawing of a typical post and panel of this fence is shown in the line drawing.

The gates have a clear opening of nine feet and consist of ¾-in. square pickets caulked into top and bottom horizontal channel irons 2x1x3-16 ins. in section. The cost data given in Table I pertain to this fence at the Georgetown Reservoir.

Table I—Cost of Concrete and Steel Fence at Georgetown Reservoir

Steel fence and gates	$1,092.32
Paint	105.00
Cement	784.44
Sand	22.54
Gravel	51.75
Stone dust	133.00
Granolithic	423.00
Lumber for forms	74.82
Brass letters	28.70
Wire brushes	4.56
Labor, surveying	72.53
Excavating and placing foundation	220.67
Building forms	73.18
Mixing and placing concrete	1,442.18
Removing forms and scrubbing concrete	341.17
Hauling materials	44.80
Erecting steel fence and painting	121.88
Grading	213.24
Superintendence and office work	139.06
Main office charges	145.42
Total	$5,498.26
Number of linear feet of fence	2,158
Cost, per linear foot	$2.55

Methods of constructing concrete sidewalks must be employed which will avoid settlement cracks, upheaval by frost, crumbling due to work done in freezing weather, contraction and expansion cracks, separation of top from base, and disintegration.

News From Coast to Coast

Convention of National Association of Builders' Exchanges

Official announcement has been made that the annual convention of the National Association of Builders' Exchanges of the United States of America will be held in Baltimore, Md., Feb. 22, 23 and 24, 1916. The headquarters will be at the Hotel Emerson and the business sessions will also be held at the same place. The president is H. L. Lewman and the secretary is J. M. Vollmer.

Convention American Portland Cement Association

The thirteenth annual convention of the Association of American Portland Cement Manufacturers was held in New York, Dec. 13 to 17, 1915. B. F. Affleck, president of the Universal Portland Cement Co., was elected president, the other officers being:

First vice-president, F. W. Kelley.
Second vice-president, Richard Hardy.
Assistant secretary, L. R. Ferguson.
Treasurer, G. S. Brown.
Assistant treasurer, John J. Matthes.

The following members of the executive committee were chosen: F. R. Bissell, H. L. Block, T. G. Dickinson, John C. Eden, R. L. Hughes, F. B. Jones, John B. Lober, D. McCool, John A. Miller, John R. Morron, Fred L. Muhs, Clarke M. Moore, S. B. Newberry, L. T. Sunderland and E. M. Young.

The Canada Cement Co. was represented by Messrs. W. H. Ford and H. L. Doble.

Meeting of Sand-Lime Brick Manufacturers

The twelfth annual convention of the Sand-Lime Brick Association was held at Milwaukee, Wis., December 7 and 8, 1915. On recommendation of the nominating committee, the following officers were elected:

President, W. H. Crume, Dayton, Ohio.
Vice-President, G. Sylvester, Calgary.
Secretary, H. W. Terry, Toronto.
Treasurer, John L. Jackson, Saginaw, Mich.

Executive Committee: L. W. Penfield, Willoughby, Ohio; W. F. McFarlane, Winnipeg; W. J. Carmichael, Willoughby, Ohio, and Irwin Toepfer, Milwaukee, Wis.

Future conventions will be held in Buffalo in the latter part of January.

Among the Canadians were: H. W. Terry, Harbor Brick Co., Toronto; W. O. McFarlane, Winnipeg Brick Co., Winnipeg, and H. F. Allardice, Silicate Brick Co., Ottawa.

Officers of Master House Painters' Association

The following are the officers of the International Association of Master House Painters and Decorators of the United States and Canada:

President, A. M. McKenzie, Hamilton, Ont., Canada.
Vice-President, W. J. Albrecht, Toledo, Ohio.
Secretary-Treasurer, Joel Kennedy, Cincinnati, Ohio.
Chief Organizer, Alexander Peters, Boston, Mass.

Officers for 1916 of Hamilton Builders' Exchange

The Builders' Exchange of the city of Hamilton, Ont., held its annual meeting on December 14, for the purpose of electing officers for the year 1916. The following were elected:

C. T. Pearce, local manager of the Pease Foundry Co., president.

E. Kent, of Kent, Garvin & Co., builders' supplies, first vice-president.

William Penny, of Bremner & Penny, contractors, second vice-president.

James McNeil, treasurer.

Messrs. Hannaford, Dennis, Ford, Murray and Somerville, directors.

Annual Provincial Convention

After the election of officers a very interesting address was given by J. Flower, secretary of the Provincial Builders' Exchange, on the Workmen's Compensation Act. Mr. Flower set forth very clearly the additions and amendments which have been made since the passing of the Act, and also gave details of some amendments which will likely be made in the near future.

The convention of the Provincial Builders' Exchange, which is to be held in Hamilton the first week of February, was discussed at length. A committee will be appointed to entertain these visitors. It is expected that three hundred or more delegates, all connected with the building trade, from all parts of Ontario, will be present, together with some delegates from the large centres of the United States.

The meeting adjourned about 1 a.m., after taking part in a sumptuous banquet.

Fourteenth C.N.C.P.A. Convention

The fourteenth annual convention of the Canadian National Clay Products Association will be held at the King Edward Hotel, January 18, 19 and 20, 1916. A good program has been arranged for, including a visit to the new Technical School at 4 p.m. on Tuesday, January 18, when all builders are invited to join the clay products manufacturers to visit the "construction" shops at the Technical School.

Geo. E. Jordan Opens a Carpenter Shop

Mr. Geo. E. Jordon has opened a carpenter shop at 2401 Yonge St., Eglinton, Toronto. He is a builder and

STAIRS, DOORS AND COMPLETE WOODWORK

THE whole interior woodwork in the beautiful residence of Mr. W. M. Weeks, described in this issue, was supplied by Cameron & Campbell, 578 Queen Street East, Toronto. The splendid finish of this residence is unique in design, stands in a class by itself, and is a sample of the work which Cameron & Campbell are prepared to duplicate, whether for the smallest house, the palatial residence, the store, or the office.

WE ARE PREPARED TO SUPPLY THE FOLLOWING:

Doors and Panels	Window Frames and	Mantels	Shelving
Hardwood, Pine Trim	Sash	Special Built-in	Hardware Shelf Boxes
and Oak Flooring	Stairways	Furniture	Display Cases
Paneling	General Woodwork	Counters	

CAMERON & CAMPBELL, 578 QUEEN STREET EAST, TORONTO, ONT.

carpenter who gives attention to stormsash, storm doors, sunrooms, floor and stair work, roofs, mantles, wood turning, etc. He has installed the necessary equipment, including an Elliot woodworker, and is prepared to do quick and accurate work.

New Heating By-Law for Toronto Being Discussed

The heating men, including warm air, hot water and steam heating contractors, are consulting with Mr. W. W. Pearse, City Architect, Toronto, about a new building by-law for Toronto, to cover the installation and inspection of heating systems.

Book Review

Carpentry and Joinery.—By Banister F. Fletcher, author of several books of architecture and building construction, and Herbert Phillips Fletcher, 324 pages, 5 x 7 ins., illustrated, published by Whittaker & Co., 2 White Hart Street, Paternoster Square, London, E.C., England, also 64 Fifth Ave., New York. Price 6s. ($1.50) net.

Carpentry and Joinery is a text-book for architects, engineers, surveyors, craftsmen and students and is in its fourth edition. For that edition much of it has been rewritten and brought up-to-date. The book has found a wide sale in all the British Dominions, the larger sale being due to the completeness of the work. Beginning with the characteristics of woods, the articles follow along in natural sequence on joints; roofs, simple and more fancy construction; bridges; shoring and strutting; pillars, beams and girders; floors; partitions; moulding; doors; windows; framing; skylights, stairwork, etc. The inclusion of figured sketches of old buildings in England adds a great deal of interest to the book, making it unique as a text-book, since it deals with the constructive side and also with the improvement of artistic craftsmanship.

Catalogue Reviews

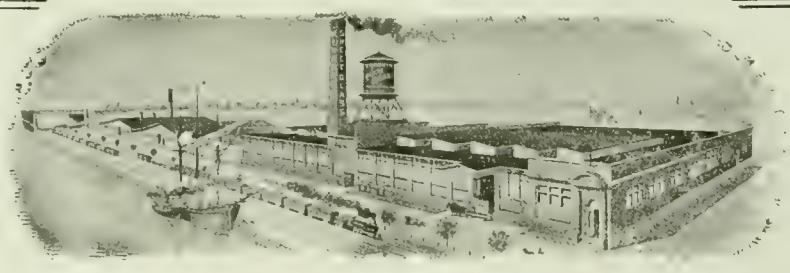
Canada Fibre Board.—Canada Fibre board, made by Fibre Products, Limited, Toronto, is described with illustrations in a twelve-page booklet issued by them.

Concrete Mixers.—Folder from the Marsh-Capron Mfg. Co., 460 Old Colony Bldg., Chicago, illustrates and describes a number of M.-C. mixers and their methods of operation by gas, steam or electricity.

Globe Iron Roofing.—Catalogue "H," 166 pages, 7 x 10 ins., has been issued by the Globe Iron Roofing & Corrugating Co., Cincinnati, Ohio. It deals with "Globe" roofings, sidings and sheet metal building materials. A talk is given on open-hearth iron, followed by detailed descriptions with uses of corrugated sheets, seamless roofing, imitation stone sheets, shingles, ventilators, etc. Tables are given of square feet contained in any number of sheets of roofing or siding. All tables of information on black sheets.

Promotion of Safe Building Construction—This is copy of an address before the annual convention of the Face Brick Dealers' Association, by Floyd E. Waite, 340 Leader-News Bldg., Cleveland, Ohio, who is counsel for the Society Advocating Fire Prevention.

RED **S** BRAND WINDOW GLASS



GLASS BENDERS TO THE TRADE

THE TORONTO PLATE GLASS IMPORTING COMPANY, LIMITED

DON ROADWAY

Plate, Window, Figured, Stained, Wired, Bent, Mirror and Ornamental Glass

TORONTO

Price List of Building Materials—Revised to Date

EDITOR'S NOTE—Great care is exercised in obtaining prices for this department. They are as accurate as it is possible for us to make them. We know, however, that because of varying conditions, different dealers' prices are bound to vary somewhat; and our purpose in publishing this department is to give readers an idea of prices, rather than absolutely definite information.

PRICE AT MONTREAL

Hemlock Lumber

2 x 4 in. to 2 x 12 in., 8 to 14 ft.	$24.00
2 x 4 in. to 2 x 12 in., 16 ft.	26.00
2 x 4 in. to 2 x 12 in., 18 ft.	28.00 to 30.00
1 in. hemlock No. 1	22.00
No. 1 hemlock decking	23.00 to 25.00
No. 2 hemlock dimensions and 1 in.	26.00 to 30.00

Pine

1 in. common and better pine 8 to 12 in. wide, rough	$32.00 to 40.00
2 in. white pine, mill stock	29.00 to 33.00
⅞ x 8 and 10 in. pine shelving	36.00 to 45.00
⅞ x 12 pine shelving	42.00 to 50.00
No. 1 white pine flooring	40.00
No. 1 spruce flooring	30.00
No. 1 pine decking, D2S	40.00
No. 1 pine V. or beaded sheeting	40.00
No. 2 pine V. or beaded sheeting	30.00

Pine Trim for Paint Finish

4 in. casing, per 100 ft.	$1.75
5 in. casing, per 100 ft.	2.10
8 in. pine base, per 100 ft.	3.25
10 in. pine base, per 100 ft.	4.20
4 in. pine window stool, per 100 ft.	2.75

Shingles, Lath Roofing, Etc.

No. 1 pine lath	5.00
No. 2 pine lath	4.50
No. 1 spruce lath	4.00

Cedar Posts—Fence

5 in. at small end	5c. foot
7 in. at small end	7c. foot

Hardware

Nails, wire, common	$2.30 base keg
Nails, cut, common	2.50 " "
Sash weights, cast iron	1.50 per 100 lbs.
Tarred felt paper	.43 roll
Building paper	.35 roll

Brick, Tile, Terra Cotta, Sewer Pipe

No. 1 dry pressed red bricks	17.00
No. 1 dry pressed buff bricks	21.00
Red stock bricks	11.50
Grey stock bricks	12.00
Wire cut brick for foundation work	10.00
Fire brick	25.00
Sewer pipe, 4 inch	10c. foot
Sewer pipe, 6 inch	15c. foot

Cement, Plaster, Stone, Etc.

Cement (bags extra)	1.90 bbl.
Sand, for cement or brick work	.95 ton
Lime	.38 per 100 lbs
Hydrated lime	10.00
Mortar color	5.00 bbl.
Plaster of paris	2.35
Crushed stone 2 in.	1.40
Crushed stone, 1 in.	1.60
Crushed stone, ⅜ in.	1.75
Hardwall plaster	$6.50 per ton
Gravel	1.35 yard
Hair (plaster)	.03 per lb.

PRICE AT TORONTO

Hemlock Lumber

2 x 4 in. to 2 x 12 in., 8 to 14 ft.	$21.00 to 29.00
2 x 4 in. to 2 x 12 in., 16 ft.	21.00 to 29.00
2 x 4 in. to 2 x 12 in., 18 ft.	24.00 to 30.00
1 in. hemlock No. 1	22.00 to 26.00
No. 1 hemlock decking	24.00 to 28.00
No. 2 hemlock dimensions and 1 in.	18.00 to 23.00

Pine

1 in. common and better pine 8 to 12 in. wide, rough	$25.00 to 33.00
2 in. white pine, mill stock	29.00 to 34.00
⅜ x 8 and 10 in. pine shelving	33.00 to 40.00
⅞ x 12 pine shelving	45.00 to 48.00
No. 1 white pine flooring	34.00 to 37.00
No. 1 spruce flooring	27.00 to 32.00
No. 1 pine decking, D2S	26.00 to 31.00
Spruce decking	27.00 to 32.00
No. 1 pine V. or beaded sheeting	35.00 to 39.00
No. 2 pine V. or beaded sheeting	30.00 to 33.00

No. 1 Common Yellow Pine

2 x 4 in. to 2 x 14 in., 10 to 16 ft.	$31.00 to 40.00
2 x 4 in. to 2 x 14 in., 18 to 20 ft.	33.00 to 42.00
2 x 4 in. to 2 x 14 in., 22 to 24 ft.	35.00 to 44.00

Yellow Pine Finish

4/4 x 6, 8, 10 and 12 B. & B. smoke finish	$45.00
5/4 x " " " "	52.00
6/4 x " " " "	52.00
8/4 x " " " "	60.00
4/4 x " " " steam finish	48.00 to 52.00
5/4 x " " " "	50.00 to 55.00
6/4 x " " " "	50.00 to 55.00
8/4 x " " " "	60.00 to 65.00

Pine Trim for Paint Finish

4 in. casing, per 100 ft.	$1.80 to 2.00
5 in. casing, per 100 ft.	2.00 to 2.50
8 in. pine base, per 100 ft.	2.75 to 3.25
10 in. pine base, per 100 ft.	4.00 to 4.50
4 in. pine window stool, per 100 ft.	3.00

Hardwood Trim, Flooring, Etc.

Quotations will be given on request.
See editor's note above.

Shingles, Lath Roofing Etc.

XXX B. C. cedar shingles	$3.35 per M
N. B. extras	4.00
No. 1 pine lath	5.00 to 6.00 per M
No. 2 pine lath	4.75 to 5.00
No. 1 spruce lath	4.25
Roofing	1 ply—$1.60 per sq.
	2 ply— 2.00 "
	3 ply— 2.40 "

Cedar Posts—Fence

5 in. at small end	.25 each
7 in. at small end	.50 each

Hardware

Nails, wire, common	$2.85 cwt.
Nails, cut, common	3.50
Sash weights, cast iron	2.00
Tarred paper	.60 roll
Building paper, plain	.50

NOTE TO READERS. We would be glad to have suggestions from readers as to the extension or modification of this list.

Price List of Building Materials—*Continued.*

Price at Toronto—*Continued*

Glass

United inches	Star	D.D.
Up 25 (per 100-ft. box)	$6.50	8.60
26-40	$7.00	10.00
41-50	7.40	11 70
51-60	8.00	12.00
61-70	8.75	12.75
71-80	9.50	13.85
81-85	10.50	17.50
86-90		18.85
91-95		19.20
96-100		22.75
101-105		32.00
106-110		36.00

Less 20 p.c. F.O.B. Toronto.

Wired glass	16c per sq. ft. less 10 p.c.

Brick, Tile, Terra Cotta, Sewer Pipe

No. 1 dry pressed red bricks	$14.00 to 18.00 pr M
No. 1 dry pressed buff bricks	14.50 to 18.00
Red stock bricks	10.00 to 12.50
Sand lime brick	8.50
Grey stock bricks	10.50 to 12.50
Sewer brick	8.75 to 9.50
Wire cut brick for foundation work	8.00 to 9.00
Porous terra cotta bricks	12.00 to 15.00
No. 1 enamelled bricks, all colors, from	80.00 to 150.00
Fire brick	26.00 to 30.00
Rough texture brick	15.00 to 17.00
Sewer pipe, 4 inch	10c. foot
Sewer pipe, 6 inch	16c. foot
Verandah post caps, 16 in.	1.45 each
Verandah post caps, 20 in.	1.75 "
Chimney caps, 1 flue in 1 piece	2.00 "
Chimney caps, 2 flues in 2 pieces	3.50 "
Chimney caps, 3 flues in 3 pieces	5.00 "

Cement, Plaster, Stone, Etc.

Cement (bags extra)	$1.85 bbl. (1.55 in car lots)
Sand, for cement or brick work	1.20 a yard
Lime	.38 cwt.
Hydrated lime (Canadian)	10.60 ton
Hydrated lime (American)	13.35 "
Mortar color	black, 3; red, 2
Plaster of paris	$1.50 to 2.50
Crushed stone, 2 in.	1.20
Crushed stone, 1 in.	1.25
Crushed stone, ⅝ in.	1.25
Hardwall plaster	7.00 neat 4.00 to 5.00 sanded
Gravel	1.50
Hair (plaster)	.07 lb.

PRICE AT WINNIPEG

Hemlock Lumber

2 x 4 in. to 2 x 12 in., 8 to 14 ft.	$29.00
2 x 4 in. to 2 x 12 in., 16 ft.	29.00
2 x 4 in. to 2 x 12 in., 18 ft.	29.00

Shingles, Lath Roofing, Etc.

XXX B. C. cedar shingles	$4.00 & 3.50 per M
No. 1 pine lath	5.75 per M
Metal lath	.16 to .20
Roofing felt (2-ply)	2.50 per roll

Hardware

Nails, wire, common	$3.70 per keg
Nails, cut, common	3.70
Sash weights, cast iron	2.75 cwt.
Tarred felt paper	1.00 per roll
Building paper	.75
Insulating paper	1.25

Price at Winnipeg—*Continued*

Glass

United inches	Single	Double
Up 25	$6.00	8.00
26-40	6.50	9.00
41-50	7.00	10.25
51-60	7.50	11.00
61-70	8.00	11.75
71-80	8.50	12.75
81-85		15.75
86-90		16.75
91-95		17.75
96-100		21.00
101-105		23.50
106-110		27.00

Brick, Tile, Terra Cotta, Sewer Pipe

No. 1 dry pressed red bricks	$25.00 to 50.00
No. 1 dry pressed buff bricks	30.00 to 40.00
Red stock bricks	25.00
Sand lime brick	12.00
Porous terra cotta bricks	18.00 per M
No. 1 enamelled bricks, all colors, from	100.00
Fire brick	52.50
Oriental brick	35.00
Sewer pipe, 4 inch	.11 per ft.
Sewer pipe, 6 inch	.18½ per ft.

Cement, Plaster, Stone, Etc.

Cement (bags extra)	$2.60 per bbl.
Sand, for cement or brick work	1.85 a yard
Lime	.34 per bu.
Hydrated lime	12.00 per ton
Mortar color	.05 per lb.
Plaster of paris	.75 per bag
Crushed stone, 2 in.	2.65 per yard
Crushed stone, 1 in.	2.90
Crushed stone, ⅝ in.	2.90
Hardwall plaster	13.00 per ton
Gravel	1.85 per yard
Hair (plaster)	1.25 per bale

PRICE AT VANCOUVER

Shingles, Lath Roofing, Etc.

XXX B. C. cedar shingles	$2.20 & 2.10 per M
No. 1 pine lath	2.25 per M

Hardware

Nails, wire, common	$3.25 per keg
Nails, cut, common	4.25
Tarred felt paper	.90 per roll
Building paper	.70

Brick, Tile, Terra Cotta, Sewer Pipe

No. 1 dry pressed red bricks	$42.00 per M
No. 1 dry pressed buff bricks	42.00
Red stock bricks	13.00
Fire brick	45.00
Sewer pipe, 4 inch	.25 per ft.

Cement, Plaster, Stone, Etc.

Cement (bags extra)	$3.00 per bbl.
Lime	1.35 per bbl.
Hydrated lime	4.25 per bbl.
Plaster of paris	4 50 per bbl.
Hardwall plaster	14.50 per ton
Hair (plaster)	14.50 per ton

NOTE TO READERS. We would be glad to have suggestions from readers as to the extension or modification of this list.

Advertisements that Remind You

R. Laidlaw Lumber Co., Limited

Everything in Lumber

Timbers, Sash Doors, Columns, Etc.

Head Office: 65 Yonge St., TORONTO

W. Walker & Son

Hardware Merchants

1228 Yonge Street Toronto

North 3136. Private Branch

"The house of well-made Hardware."

Get our prices. We are specialists in Builders' Hardware—always a large stock on hand.

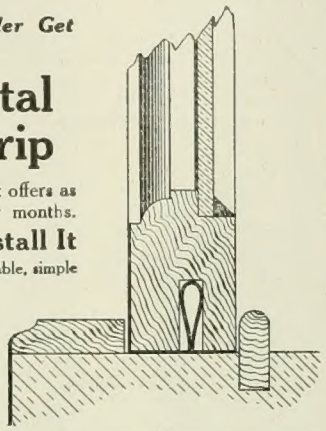
Mr. Carpenter and Builder Get Acquainted With

Pullman Metal Weather Strip

and the tremendous opportunity it offers as a profit maker during the winter months.

It Sells Itself—You Install It

It reduces fuel bills over 30%. It is durable, simple to install and lasts a lifetime. Write for biggest money-making weather strip proposition ever offered. Exclusive territories.



Pullman Metal Weather Strip Co. 22 York Place York, Pa.

DENNISTEEL LONDON - CANADA

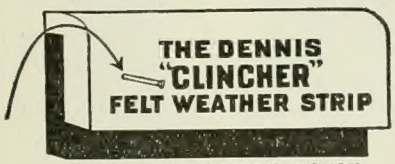
THE BEST STEEL LOCKERS MADE IN CANADA

MADE BY

THE DENNIS WIRE AND IRON WORKS CO. LIMITED

LONDON, CANADA

This is a reminder to read ALL the advertisements in The Canadian Builder and Carpenter every month.



NOTE - NAIL PASSES THROUGH BOTH MOULDING AND FELT.

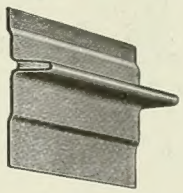
The Most Effective Weather Strip Made

It will thoroughly exclude **Wind, Cold, Snow, Rain** and **Dust** and the fact that the **felt** is **glued** to the **bottom** of the **moulding** makes it the only **dust-proof** weather strip on the market.

Write for Free Sample to **Empire Agencies, Ltd., 61 Adelaide St. E, Toronto, Ont.** Rep'tive for Ontario. **Beware of imitations. For Sale at all Leading Hardware Stores.**

Made by—W. J. Dennis & Company

2222-24-26 W. Lake St. Chicago, U.S.A.



The "Peace" Patent

Improved

Metal Weather Strip

For Windows and Doors

To Carpenters and Builders this weather-strip constitutes a necessary part of the equipment in the building of factories, offices and residential property. It is wind and dust proof, and reduces fuel bills. Windows work easier with than without it. It does away with storm sash, and lasts a lifetime. Write for illustrated pamphlet or further information to

WILLIAM PEACE CO., LIMITED

Bank of Hamilton Building, Hamilton, Ont.

Phone 286 **Live Agents Wanted**

Professional Directory

Architects, Engineers, Patent Attorneys, Etc.

Patent Attorneys

will find that they can get a good deal of business from readers of this paper by persistent advertising.

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PATENTS

STANLEY LIGHTFOOT

REG'D PATENT SOLICITOR AND ATTORNEY

LUMSDEN BLDG. (COR. ADELAIDE & YONGE) TORONTO.

NEW BOOKLET OF COMPLETE INFORMATION FREE

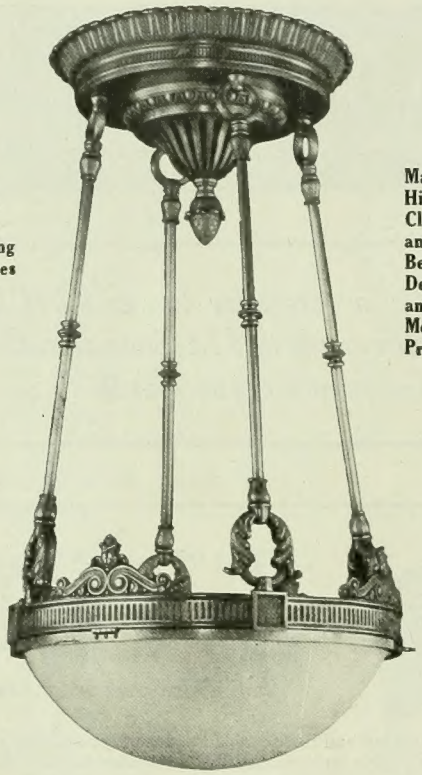
(MENTION THIS PAPER) M. 3713

Architects

will find that it pays to have a card such as this in this directory: costs only $20 per year.

Home Lighting is gradually changing to the Semi-Direct Style

Semi-Direct Gas Lighting Fixtures Have Come to Stay



Many High Class and Beautiful Designs and at Moderate Prices

Soft and Mellow, yet flooding the room with light and showing no glare. Decorative in day time as well as at night.

We have styles for every room From $10.00 up, installed

The Consumers' Gas Company
OF TORONTO

12-14 Adelaide St. W. Tel. Adel. 2180

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BATTS LIMITED
TORONTO

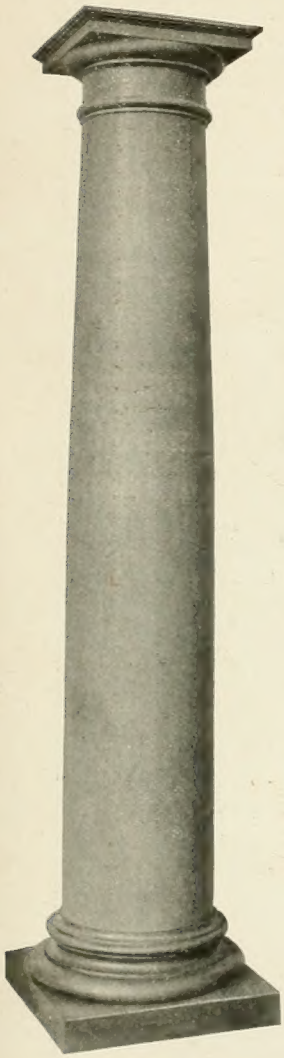
BATTS' STAVED COLUMNS

(NO. 1 WHITE PINE)

BUY GOODS "MADE IN CANADA"

(WE MANUFACTURE ALL OUR OWN GOODS)

VENEERED & PINE DOORS



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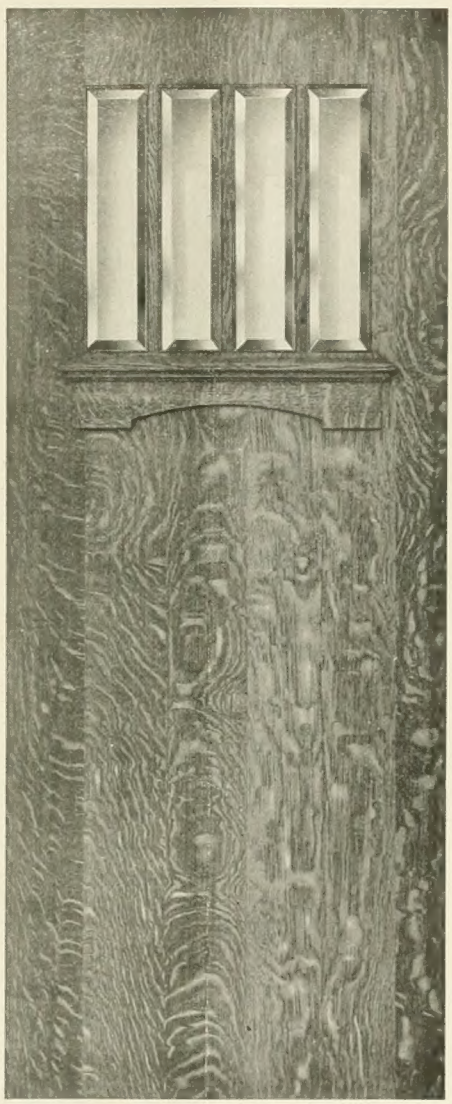
Design B.L. No. 203



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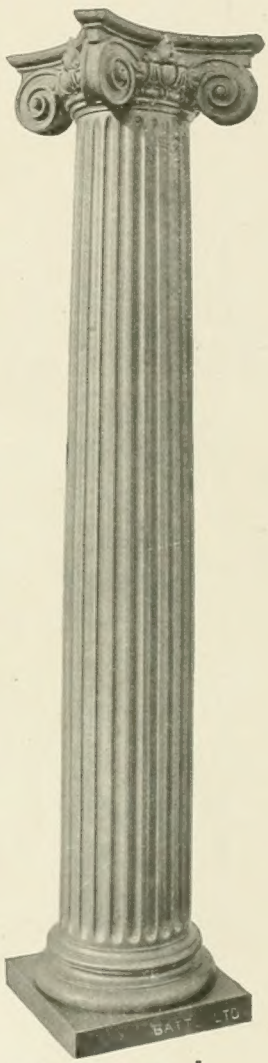

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OUR FACILITIES FOR THE EXECUTION OF ORDERS FOR DOORS AND COLUMNS TO SPECIAL DESIGN ARE SUCH THAT WE CAN SATISFACTORILY MEET ANY REQUIREMENT.

385-400 Pacific Ave. **BATTS LIMITED** West Toronto

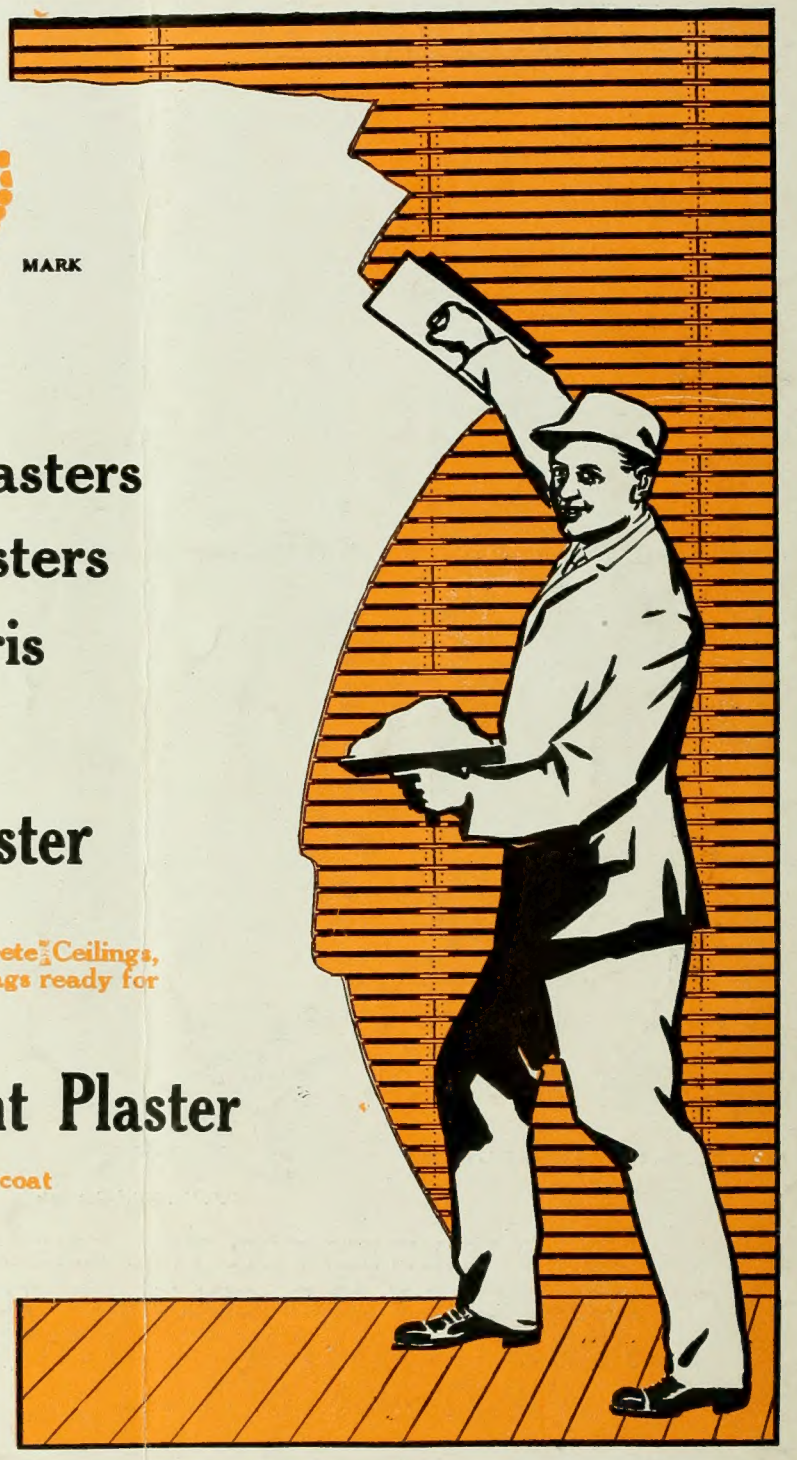
Crown Gypsum Co., Limited

MANUFACTURERS

HIGH GRADE GYPSUM PRODUCTS

TRADE MARK

CROWN



Hard Wall Plasters
Finishing Plasters
Plaster-Paris

Concrete Plaster

For plastering directly on Concrete, Ceilings, Beams and Walls. In 100 lb. bags ready for use.

"BEAVER" Cement Plaster

A neat hair fibred base coat

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